> *permanent partial disability benefits*, paid to a worker because he has both a work-related impairment and a resultant disability.

In addition to this tacit support for a wage-loss approach contained in the *Report*, the idea was examined in a Supplemental Study for the National Commission that was written by the commission's chief counsel. He criticized permanent partial disability benefits paid on the basis of impairment or loss of wage-earning capacity, and composed a paean to a wage-loss system (Lewis 1973).

The direct link between the National Commission and the Florida wage-loss approach was John Lewis, who, coincidentally, was both the general counsel of the National Commission and a Florida attorney who became the chairman of the Florida Workers' Compensation Advisory Committee. As the movement toward reform began in Florida in 1977, Lewis introduced the idea of the wage-loss approach at meetings of the committee. Then at a subcommittee meeting in January 1978, the preliminary results of the NSF study were presented by Wayne Vroman and a tentative proposal for reform of permanent partial disability benefits in Florida was provided by John Burton. The NSF study results are essentially those presented in part III of this volume, which document the serious problems of inequities and excessive litigation for Florida permanent partial disability cases under the law described in the previous section. The proposal for reform suggested *inter alia* that comprehensive guidelines be issued to rate impairments in all cases and that a dual benefit system be established. One part of the system was impairment benefits, to be paid to each worker with a permanent impairment rating of 1 percent or more. The other part was pure wage-loss benefits, paid according to what was termed the "80/80 plan." The wage-loss benefits were 80 percent of estimated wage loss, which in turn was defined as 80 percent of adjusted preinjury wages minus the actual wages after the date of maximum medical improvement.

The general ideas for the wage-loss approach discussed at the January 1978 meeting were then translated into draft legislation by John Lewis. The Lewis draft used the "80/80" formula for computing the wage-loss benefits and provided that any worker with a permanent impairment of at least 1 percent would receive a permanent impairment benefit, with the dollar amounts for the permanent impairment benefits being $100 for each percent rating from 1 to 10 percent, and higher amounts for more serious injuries.

As the wage-loss concept was thus being translated into a specific statutory proposal, the pressures for change were building. An important factor at this stage was the Florida Association of Insurance Agents (FAIA), which had been actively involved in an unsuccessful effort to amend the Florida workers' compensation law in 1977. To increase the influence of the insurance industry in subsequent legislative sessions, the FAIA and several national insurance companies had formed The Last Manifesto, a "multi-million dollar program" to reform the "state's Workers' Compensation mess."

In early April 1978, Lewis took his draft legislation to an FAIA meeting and explained the general idea of the wage-loss approach and the specific version of the concept included in his bill. Reactions were mixed at the meeting. A more serious obstacle arose when the National Council on Compensation Insurance prepared a cost estimate that indicated the bill at best would lead to a slight rate reduction. Regardless of the merits of the wage-loss bill, the likelihood that costs would not significantly drop made enactment of the Lewis bill unrealistic because of the resistance of the business community (Mintner 1982, p. 17).

The FAIA leadership, although unhappy with the specific variant of wage loss in the Lewis bill because of its costs, nonetheless was persuaded that the concept was sound. The FAIA then redrafted the Lewis bill to scale back the benefits and began to promote the idea. The wage-loss bill was not enacted in 1978 because of the short time available to educate the legislators and to muster support from all elements of the insurance industry. Furthermore, the Florida trial lawyers were a formidable opponent to the adoption of the wage-loss concept. So the 1978 session produced, instead, some limited changes in the workers' compensation statute and the enactment of a sunset provision that was designed, according to Senator MacKay, its sponsor, "to hold a gun to the Legislature's head" in 1979 (Mintner 1982, p. 21).

The wage-loss concept was further promoted and refined between the 1978 and 1979 legislative sessions. A drafting committee of The Last Manifesto rewrote the bill, and Fred Karl, general counsel of the FAIA, and other FAIA staff members met with various groups within Florida promoting the wage-loss approach.

By November 1978, Associated Industries of Florida also provided tentative support for a kind of wage loss. But the Associated Industries leadership also were unwilling to support the Lewis version of the wage-loss bill because of the expense involved. Consequently, Mary Ann

Stiles, the association's workers' compensation expert, started her own research on closed cases at the Bureau of Workers' Compensation in order to provide a basis for her own variant of wage loss.

The FAIA/Last Manifesto version of wage loss suffered a serious blow in January 1979 when the National Council on Compensation Insurance actuary appeared before the Florida legislature and presented figures suggesting that the "rate savings were minimal to nonexistent, while benefits might actually decrease" (Mintner 1982, p. 49). But even though the specific version of wage loss promoted by the FAIA was thus side-tracked next to the original Lewis proposal, nonetheless the general concept soon picked up more steam.

The impetus was provided by a Workmen's Compensation Conference on Wage Loss held January 16, 1979, that was sponsored by the FAIA. The conference, at which (according to *The Circle Solution*) "all the right buzz words were used," was held in the chambers of the Florida House of Representatives, and played to an audience of legislators, interest group representatives, and the media. Speakers included the new governor, Bob Graham, the insurance commissioner, who endorsed wage loss as a "bold, but brilliant" concept, the House speaker, the Senate president, and the chief executives of three of the Manifesto companies. John Lewis and John Burton also spoke.

The next day the Joint Legislative Committee on Workmen's Compensation voted 4-2 to endorse the general concept of wage loss. Moreover, the specific version of wage loss favored by the FAIA apparently was favored by the Joint Committee. By February, however, the FAIA proposal began to be dismantled by the Joint Committee. "At the urging of Associated Industries' Jon Shebel, the Joint Committee trimmed back impairments benefits to cover only amputation, blinding or disfigurement. Attorneys' fees would be paid 100% by the claimant, another of Shebel's proposals" (Mintner 1982, p. 70). As a result of the conflicting pressures,

> in early March, the Joint Committee adopted a comprehensive and massive wage-loss bill that promised to cut rates by 21%. It contained many fundamental changes in the way Comp would be administered, and there were amendments to the agents' original bill that made them and the companies unhappy. Still it was very close to their original proposal, and was "wage-loss at its finest," they maintained. (Mintner 1982, p. 73)

Then the bombshell was dropped. On March 14, the AFL-CIO and Associated Industries of Florida announced they were supporting a new workers' compensation reform package. One reason the AFL-CIO was willing to join this coalition is that the bill supported by the Joint Committee (which had its best chance for enactment in the Senate) would have almost entirely favored business by reducing benefits. Dan Miller, the AFL-CIO president, was convinced that some form of wage loss was going to pass, and he wanted to salvage something for labor (Mintner 1982, p. 75). What the Associated Industries got from the coalition was support of the AFL-CIO for a package that included a substantial curtailment of lawyers' role in the system. Shebel, president of Associated Industries, felt that the lawyers' chances of defeating reform would be weakened if labor's normal support for plaintiffs' attorneys could be neutralized.

The steps between the March announcement of the AFL-CIO and Associated Industries coalition and the eventual enactment of the workers' compensation statute in April are complicated, but the essence is that most of the provisions those parties sought were included in the statute. The statute made substantial changes in the structure of the workers' compensation delivery system, in the role of lawyers, and in the criteria for permanent partial disability benefits. It adopted a dual benefit system for permanent partial disability, with impairment benefits for certain types of injuries and wage-loss benefits for workers with actual wage loss after the date of MMI.

The dual benefit system can be traced back at least to the Lewis bill first proposed in 1978. The agents had modified the proposal, limiting the amount of benefits. The bill as enacted contained impairment benefits considerably more restricted than those in the Lewis bill, and a wage-loss formula that was considerably more generous than the Lewis version. This obviously was acceptable to labor and management, since they negotiated the provision, and it was accepted with some reservations by the Florida Association of Insurance Agents. An advisory committee appointed by the governor to evaluate the 1979 legislation, however, unanimously recommended that the law not be signed. (The chairman of the advisors, John Burton, was particularly concerned about the paltry impairment benefits and the unduly generous wage-loss formula.) Governor Graham ignored his advisors and signed the bill into law on May 11, 1979.

This abbreviated recounting of the enactment of the 1979 Florida legislation suggests several useful lessons. One is that enactment of wage-loss legislation—or any major overhaul of workers' compensation, for that matter—is likely to require a crisis environment. In the case of Florida, the crisis was the rapid escalation of the costs to employers of workers' compensation. The second lesson is that the process of reform is unpredictable and even erratic. The Lewis proposal for a dual benefits system in early 1978 had modest impairment and wage-loss benefits; the ultimate legislation had much more restrictive impairment benefits coupled with more generous wage-loss benefits. The path between the starting and ending versions of the dual benefits system reflects political influences that at times were almost random. Indeed, FAIA, the organization that devoted the most resources over the 1977-79 period to the enactment of the wage-loss concept, almost lost control of the reform process at the end. The third lesson is that the reform outcome in a particular state is very much tied to the political power of the key interest groups in that state. In most states, organized labor and claimants' attorneys are natural allies in the struggle against the introduction of wage-loss benefits, and they usually are strong enough to prevail. In Florida, organized labor is relatively weak, and when it became apparent that the labor-lawyer alliance could not defeat wage loss, the AFL-CIO leadership threw in with management in order to salvage something for labor. As Dan Miller, the Florida AFL-CIO president, has observed, the 1979 wage-loss bill and the accompanying increase in maximum weekly benefits were of particular value to high-skilled workers in hazardous occupations, and it is among those types of workers that AFL-CIO strength is centered in Florida.[18] Thus the AFL-CIO support for wage loss in Florida was the product of special circumstances not found in many states.

The forces that led to the enactment of wage-loss legislation in Florida are unlikely to be duplicated in many other jurisdictions. Whether the outcome deserves to be emulated in any case will be further examined in the final pages of this chapter.

Key Features of the 1979 Florida Workers' Compensation Reform

The 1979 legislation eliminated the previous approach to permanent partial disability benefits, which distinguished between scheduled and nonscheduled injuries and for the latter type offered the worker the choice of basing ratings on physical impairment or loss of earning capacity.

The new law established a dual benefit system with impairment benefits and wage-loss benefits.

Impairment Benefits. These benefits are provided in Section 440.15(3)(a). They are paid to workers with certain types of permanent impairments (amputations, loss of 80 percent or more of vision, or serious head or facial disfigurements) but are not paid to workers with other types of permanent impairments (such as total or partial loss of use of a body member). This is a restrictive schedule, since it excludes most permanent partial injuries which involve loss of use rather than amputation. The only change since 1979 in the injuries qualifying for impairment benefits is that in 1982 the law was amended to make clear that 80 percent of loss of vision in either eye qualifies for benefits.

The amounts of impairment benefits in the 1979 legislation were $50 for each percent of permanent impairment for ratings of 1 to 50 percent, and $100 for each percent over 50 percent. Thus a worker with a 60 percent impairment rating received $3,500 under the 1979 law. These amounts were increased, effective May 1, 1982, to $250 for each percent of permanent impairment for 1 to 10 percent ratings, and $500 for each percent over 10 percent. Thus a worker with a 60 percent impairment rating since that date receives $27,500. These impairment benefits can be paid in a lump sum as of the date of MMI.

Determination of the extent of the permanent impairment is governed by Section 440.15(3)(a)(3), which provides, in part, that

> the division shall establish and use a schedule. . .based on generally accepted medical standards for determining impairment and may incorporate all or part of any one or more generally accepted schedules used for such purpose . . . pending the adoption, by rule, or a permanent schedule, Guides to the Evaluation of Permanent Impairment . . . by the American Medical Association, shall be the temporary schedule. . . .

Wage-loss Benefits. Workers with permanent impairments are also eligible for wage-loss benefits as of the date of MMI if they suffer at least a 15 percent loss of earnings. Benefits are 95 percent of the earnings losses in excess of the 15 percent threshold. The maximum wage-loss benefit is the lesser of (a) 66 2/3 percent of the worker's preinjury wage, or (b) 100 percent of the state's average weekly wage. The maximum weekly benefit was $195 in 1979 and $318 as of January 1986. For wage-loss benefits that extend more than 25 months beyond the

date of MMI, there is (in effect) a 5 percent per year escalation in potential earnings used to calculate wage loss.[19]

There are several important limitations on workers' eligibility for wage-loss benefits. One is that workers lose their eligibility for the benefits if they do not experience at least three consecutive months of compensable wage loss in each two-year period after the date of MMI. Other limitations concern the potential duration for wage-loss benefits once they commence. The 1979 statute provided that the maximum duration for the wage-loss benefit was 525 weeks (those injuries that occurred on or before July 1, 1980, had a maximum duration of 350 weeks) or age 65, whichever occurred first. The law was amended effective July 1, 1980, to provide that the benefits stop at age 65 only when the worker becomes eligible for Social Security Old Age Benefits. For workers age 62 who were actually receiving Social Security Old Age Benefits, the wage-loss benefits were reduced by the amount of the Old Age benefits, not to exceed 50 percent of those wage-loss benefits. In 1983, the provision was further amended to eliminate the termination of wage-loss benefits at age 65 if the worker is eligible for Old Age benefits. Effective June 30, 1983, Section 440.15(3)(b)(4) provided that when the worker is eligible for Old Age benefits (normally age 62), the wage-loss benefit is not terminated but the amount is reduced so that the sum of the Old Age and wage-loss benefits is equal to the amount of wage-loss benefits that would otherwise be payable. The 1983 legislation also provides that any month when no wage-loss benefit is paid because the Old Age benefit is greater than the wage-loss benefit nominally due counts toward the three consecutive months in each two-year period during which benefits must be payable in order for eligibility for wage-loss to continue.

The aspect of the wage-loss benefits that has provoked the most contention is the definition of earnings losses. Section 440.15(3)(b)(1) provides, in part, that wage-loss benefits "shall be based on actual wage-loss" and "shall be equal to 95 percent of the difference between 85 percent of the employee's average monthly wage [before the injury] and the salary, wages, and other remuneration the employee is *able to earn* after reaching maximum medical improvement as compared on a monthly basis" (emphasis added). As to what is meant by "able to earn," Section 440.15(3)(b)(2) of the 1979 statute provided:

> The amount determined to be the salary, wages, and other remunerations the employee is able to earn after reaching

> the date of maximum medical improvement shall in no case be less than the sum actually being earned by the employee, including earnings from sheltered employment. In the event the employee voluntarily limits his or her income or fails to accept employment commensurate with his or her abilities, the salary, wages, and other remuneration the employee is able to earn after the date of maximum medical improvement shall be deemed to be the amount which would have been earned if the employee did not limit his or her income or accepted appropriate employment . . . the burden shall be on the employee to establish that any wage loss claimed is the result of the compensable injury.

This seemingly innocuous language has led to a series of significant decisions that will be reviewed at some length below. The decisions in turn have provoked a 1983 amendment to Section 440.15(3)(b)(2) that will be discussed in conjunction with those cases. As with these original statutory provisions, the amendment has generated controversy as to the legislative intent.

Other Benefits. In addition to the changes involving permanent partial disability benefits, there were also significant changes in the other types of benefits. For example, the nominal replacement rate for temporary total disability and permanent total disability benefits was increased from 60 percent of the worker's preinjury wage to 66 2/3 percent. In addition, the maximum for all types of benefits was increased from 66 2/3 percent of the state average weekly wage ($130 prior to July 1, 1979) to the lesser of (a) 100 percent of the state average weekly wage ($196 as of July 1, 1979, and $318 as of January 1, 1986) or (b) 66 2/3 percent of the worker's preinjury wage.

Administration. The 1979 legislation also included significant changes in the administrative structure and procedures of the workers' compensation program. The previous law had provided that disputed claims were first heard by judges of industrial claims, with appeals going to the Industrial Relations Commission and then by petition for writ of certiorari to the Florida Supreme Court. The 1979 law abolished the IRC and changed the nomenclature of the judges to deputy commissioners. Appeals from the deputy commissioners now go to the First District Court of Appeal (part of the regular court system in Florida) and then to the Florida Supreme Court by petition for writ of certiorari. In short, there is no longer an appellate level within the workers' com-

pensation program that deals exclusively or primarily with workers' compensation cases.

The 1979 legislation also elevated the Bureau of Workmen's Compensation to the Division of Workers' Compensation and gave it greater authority and responsibility for administration. Section 440.44 provides that the Division is to "assume an active and forceful role in its administration of this act so as to ensure that the system operates efficiently and with maximum benefit to both employers and employees." The law attempts to ensure that injured workers are fully and promptly informed of the proper procedures and their legal rights. For example, injured workers are to be mailed information on the program, and those suffering injuries that might permanently disable them are to be contacted personally. Moreover, the Division is to become more actively involved in controverted claims, including the issuing of advisory opinions as to the benefits payable in each case.

Attorneys' fees were also affected by the 1979 law. Before July 1, 1978, attorneys' fees for claimants were entirely paid by the employer or carrier; in 1978, the worker was required to pay 25 percent of his own attorney's fee. The 1979 law requires the claimant (with several exceptions) to pay 100 percent of his own attorney's fee. All attorneys' fees have to be approved as reasonable by the deputy commissioner based on criteria included in the statute, such as the amount of time expended by the attorney. The statute was amended in 1980 to provide that in determining a reasonable attorney's fee, the deputy commissioner shall consider only those benefits the attorney is responsible for securing. In other words, those benefits voluntarily paid by the employer or carrier are not to be considered in determining the claimant's attorney's fee.

The widespread utilization of washouts (compromise and release agreements) to terminate cases was also affected by the 1979 statute. Section 440.20(12)(a) states that "it is in the best interests of the injured worker that he receive disability or wage-loss payments on a periodic basis." Washouts of future medical benefits are strictly prohibited. Settlements involving cash benefits are absolutely prohibited until six months after the date of MMI, and thereafter are permitted only in special circumstances, such as when the claimant can demonstrate that a lump-sum payment will definitely aid in the rehabilitation process or is otherwise clearly in the workers' best interest and that lump-sum payment will avoid undue expense or undue hardship to any party.

The 1983 legislation provides a limited exception to the general prohibition on washouts found in Section 440.20(12)(a). The new law allows washouts when the employer or carrier denies that a compensable injury occurs and the deputy commissioner "finds a justifiable controversy as to legal or medical compensability of the claimed injury or the alleged accident." Lump sums are not permitted under this exception if the employer or carrier initially accepts the case as compensable or provides any benefits.

These are by no means the only changes in the Florida Workers' Compensation program included in the 1979 statute and the subsequent amendments. Our focus for the balance of this section is primarily on those matters pertaining to permanent partial disability benefits. But it should be obvious that an overall assessment of the 1979 legislation in terms of its desirability to labor, management, carriers, workers, and the public is complicated because of the many aspects of the program that were affected.

Constitutionality of the 1979 Legislation

The Florida Supreme Court rejected a constitutional challenge to the permanent partial benefits provisions of the 1979 legislation in *Acton v. Fort Lauderdale Hospital*, 440 So.2d 1282 (Fla. 1983). Acton injured his knee at work and received medical care and temporary total disability benefits for five months, at which time he returned to work. Acton received a 25 percent permanent disability rating for the knee injury, which would have qualified him for permanent partial disability benefits under the Florida law in effect before the 1979 amendments. Under the new law, however, the deputy commissioner found that the injury did not qualify Acton for permanent impairment benefits, which are limited to amputations, 80 percent or more vision loss, or serious head or facial disfigurement, nor was Acton entitled to wage-loss benefits because he was earning more after the injury than before. Acton unsuccessfully argued that the 1979 legislation violated constitutional guarantees of equal protection and access to the courts.

While the courts in *Acton* and other cases have endorsed the constitutionality of the basic scheme for permanent disability benefits in the 1979 legislation, they have not hesitated to scrutinize and arguably even modify the statutory criteria for wage-loss benefits.

Wage-Loss Benefits: The Legal Requirements

It may be true that "wage-loss in concept is disarmingly simple" (Mintner 1982, p. 9). Nonetheless, in practice, wage-loss in Florida has complicated elements. This subsection examines some of the legal issues that have emerged as courts have interpreted the statute. We simplify the analysis by ignoring many of the issues that arise in a case in which a worker has filed a claim for wage-loss benefits, such as whether the worker experienced an injury arising out of and in the course of employment. We focus on three sets of requirements that must be met by a worker in order to qualify for wage-loss benefits: the permanent impairment requirements; the "objective" wage-loss requirements; and the "legally sufficient" wage-loss requirements. These three categories of requirements are our construct, designed to help in analyzing the Florida law. Within these three sets of requirements are subissues that may or may not be critical in a particular case.

The Permanent Impairment Requirements. First, has maximum medical improvement been reached? If the answer is no, then the worker is only potentially eligible for temporary total disability or temporary partial disability benefits, since the impairment is not yet permanent.

Second, does the worker have a permanent impairment using an acceptable rating system? The worker need not have a permanent impairment falling into one of the three categories that are prerequisites for permanent impairment benefits. But the worker must have a permanent impairment with a rating of at least 1 percent using an appropriate rating system before potentially qualifying for wage-loss benefits.

The statute designates the AMA *Guides* as the temporary schedule to be used in determining the existence and degree of permanent impairment. Initial interpretations of the 1979 statute suggested that workers would find it difficult to demonstrate they had permanent impairments not encompassed by the AMA *Guides*. Thus in *Rhaney v. Dobbs House, Inc.*, 415 So.2d 1277 (Fla. 1st DCA 1982), the claimant's allegation that she had a 5 to 10 percent impairment of the hand was denied by the deputy commissioner because under the AMA *Guides* there was no permanent impairment. The District Court of Appeals rejected a challenge to the exclusive reliance on the AMA *Guides* because there was "no evidence that claimant is not permanently impaired under the AMA *Guide* [sic] but is permanently impaired under some other standard." The reference to "some other standard" suggested that exclusive

reliance on the AMA *Guides* might not suffice. The example offered by the Court, however—loss of an arm or a leg demonstrable to the deputy by his own observation—is encompassed by the AMA *Guides* and provided little solace to those hoping to avoid exclusive reliance on the *Guides*. The high-water mark for use of the AMA *Guides* as an exclusive rating system probably was *Mathis v. Kelley Construction Co.*, 417 So.2d 740 (Fla. 1st DCA 1982). Mathis had a knee injury that caused an excessive range of motion: the knee was unstable and would buckle unexpectedly. The AMA *Guides* rate only restrictions in motion of the knee, not excessive motion, and as a result Mathis was found to have no ratable permanent impairment and was denied wage-loss benefits.

The halcyon days were short lived for the doctrine denying wage-loss benefits unless the worker had a permanent impairment ratable by the AMA *Guides*. The Court was forced to deal with facts demonstrating the limits of the AMA *Guides* in *Trindade v. Abbey Road Beef 'N Booze*, 443 So.2d 1007 (Fla. 1st DCA 1983), decided *en banc* with all 12 judges concurring. Trindade experienced a knee injury that caused his knee to buckle on occasion, for which his physician recommended a knee cage to limit motion. The surgeon could not rate the injury using the AMA *Guides* because they dealt only with loss of range of motion in rating knees, while Trindade's knee had instability due to excessive range of motion. The physician rated the knee using the American Academy of Orthopedic Surgery *Manual* and found a 5 to 10 percent permanent impairment. The Court noted that its own efforts to give the AMA *Guides* exclusive effect in order to facilitate the goal of uniformity in determining the existence and extent of permanent impairment were undertaken in anticipation of the Division adopting a more comprehensive schedule. But four years had passed since the legislature imposed on the Division the duty of establishing a comprehensive guide and mandated the use of the AMA *Guides* as a temporary schedule. Meanwhile, the Court had found it increasingly difficult to justify the exclusion of certain injuries with permanent consequences because they did not meet the rating criteria in the AMA *Guides*. Moreover, the Division during the course of this case had indicated that "it not only has been unable to produce a comprehensive schedule as mandated by the statute: It expresses doubt that a suitable schedule can be prepared, and it is anticipated that no such schedule will be forthcoming." The Court concluded that exclusive reliance on the AMA *Guides* under these circumstances would be inappropriate and indeed would be unconstitu-

tional as a violation of due process because of the arbitrary distinction between covered and excluded impairments. The Court therefore held

> that for purposes of determining eligibility for wage loss benefits . . . the existence and degree of permanent impairment resulting from injury shall be determined pursuant to the [AMA] Guides, unless such permanent impairment cannot reasonably be determined under the criteria utilized in the Guides, in which event such permanent impairment may be established under other generally accepted medical criteria for determining impairment.

The Division's immediate reaction to the December 1983 *Trindade* decision was to adopt by rule the *Manual for Evaluation of Permanent Physical Impairment of the American Academy of Orthopedic Surgeons* for use in evaluating those conditions of the hip, knee, shoulder, and elbow not covered by the AMA *Guides*. In October 1984, the Division adopted by rule the 2nd edition of the AMA *Guides* to replace the 1971 edition that had been previously used.

The use of the *Manual* of the American Academy of Orthopedic Surgeons for certain conditions not encompassed in the AMA *Guides* is defensible. More problematical are the recent rulings concerning the use of subjective complaints as a basis for permanent impairment ratings. In *Maggard v. Simpson Motors*, 451 So.2d 529 (Fla. 1st DCA 1984) the Court affirmed a denial of wage-loss benefits when the impairment rating was based solely on subjective complaints. But because of a concern over lack of uniformity among the three-judge panels in the First District Court of Appeals, an *en banc* review was held in *Martin County School Board v. McDaniel*, 465 So.2d 1235 (Fla. 1st DCA 1985). The worker experienced a back injury and during the healing period there were objective findings, such as muscle spasm. The worker was given medication, used a prescribed back brace, and his activity was restricted. After the date of maximum medical improvement there was no objective evidence of a permanent impairment. The treating physician made a permanent impairment rating of 5 percent that did not rely on the rating criteria in the Orthopedic Surgeons' *Manual for Evaluation of Permanent Partial Impairment* but was made "in reference" to the methods in the *Manual* and his experience as an orthopedic surgeon who had treated many bad backs. The deputy commissioner found there was a permanent impairment, and the eight-member majority of the Court affirmed. The opinion noted that the doctor had monitored the claimant's

chronic complaints of pain and stiffness over an extended period of two years and also noted that the program of medication and activity restriction were themselves responsible for the absence of objective signs after the date of MMI. The majority opinion distinguished the case from *Maggard*, where the permanent impairment rating was based on bare unverified subjective complaints. The four-judge dissent objected to the finding of permanent impairment because there was no objective evidence after the date of MMI, thus rendering "meaningless the standard of 'other generally accepted medical criteria for determining impairment' which we approved in Trindade."

While the *McDaniel* case involved a physician who at least made an oblique use of the Orthopedic Surgeons' *Manual*, a subsequent case abandoned even this extent of reliance on a published guide. In *United General Construction v. Cason*, 479 So.2d 833 (Fla. 1st DCA 1985), the permanent impairment rating was based primarily on a physician's "personal judgment of the claimant's history of subjective complaints of pain and specifically excluded consideration of the recognized medical reference guides." The award of wage-loss benefits by the deputy commission was affirmed by the Court, which noted that "the physician's opinion was particularly compelling due to the length of time spent in evaluating and monitoring the pattern of subjective symptoms." These recent decisions can only be viewed as a threat to the effort to restrict the eligibility for wage-loss benefits to those workers with readily verifiable permanent impairments.

The "Objective" Wage-Loss Requirements. First, are the actual earnings after the date of maximum medical improvement less than the earnings before the date of injury? If not, then the worker is not eligible for wage-loss benefits for the months in question. Two additional qualifications are necessary. First, for injuries occurring since July 1, 1980, the actual earnings in months that are more than two years after the date of MMI are discounted by a factor of 5 percent per year before they are compared to preinjury earnings. Second, the actual earnings in the month for which wage-loss benefits are claimed must be at least 15 percent below preinjury earnings before the worker qualifies for the benefits because of the threshold built into the statute.

Second, did the actual wage loss start soon and sustain sufficiently? The statute requires the actual wage loss to begin within two years from the date of MMI or the right to wage-loss benefits lapses. In addition, wage-loss benefits must be payable for at least three consecutive months during each 24-month period after the date of MMI.

Third, did the actual wage loss last too long or occur too late in life? For injuries that occurred after July 1, 1980, the maximum duration on wage-loss benefits is 525 weeks. Thus a worker with a permanent impairment who qualifies for wage-loss benefits at age 25 can in no case receive these benefits after age 35. Also, as a result of a 1980 amendment (further changed in 1983), wage-loss benefits terminated at age 65 if the worker was eligible for Old Age benefits from the Social Security program. The age 65 cutoff was challenged in *Sasso v. RAM Property Management*, 452 So. 2d 932 (Fla. 1984), appeal dismissed, 469 U.S. 1030 (1984). Sasso was age 78 at the time of his injury, and consequently the carrier denied wage-loss benefits. The Florida Supreme Court found that the age 65 cutoff provision did not violate constitutional guarantees of equal protection and access to the courts. The age 65 cutoff provision also was alleged to violate the Federal Age Discrimination and Employment Act of 1967 (ADEA), but the Florida Supreme Court held that the Florida law was not unconstitutional under the Federal Supremacy clause in *O'Neil v. Department of Transportation*, 468 So. 2d 904 (Fla. 1985), cert. denied, ____ U.S. ____, 106 S.Ct. 174 (1985). A similar allegation that the Florida statute violated the Federal Supremacy clause because it conflicted with the Social Security Act was rejected by the Florida Supreme Court in *Acosta v. Kraco, Inc.*, 471 So. 2d 24 (Fla. 1985), cert. denied, ____ U.S. ____, 106 S.Ct. 576 (1985). As discussed in the previous subsections, the termination of wage-loss benefits at age 65 for workers qualifying for Social Security Old Age benefits was eliminated in 1983, and in its place an offset provision was added that reduces wage-loss benefits for workers who are eligible for Old Age benefits.

The "Legally Sufficient" Wage-Loss Requirements. The two sets of requirements for wage-loss benefits described above only provide the background for the most interesting legal developments concerning wage-loss benefits. The portions of the statute that have given rise to the controversies are Section 440.15(3)(b)(1) and (2) (quoted earlier in this chapter).

At least five separate requirements have been used in one or another of the Florida cases that have decided whether a wage loss was "legally sufficient" to satisfy Section 440.15(3)(b). The five tests (with alternative versions of the fifth) are:

(i) There must be an interruption of employment because of the permanent impairment.

(ii) There must be an adequate job search.

(iii) There must be no refusal of suitable work.

(iv) There must be no voluntary limitation of income.

(va) Even if tests (i)-(iv) are satisfied, the wage loss must be due *solely* to the worker's physical inability to perform work, and other factors, such as slack economic conditions, must play no part in the loss of wages.[20]

(vb) The wage loss must be due at least *in part* to the physical consequences of the injury. Even if economic conditions also play a part in causing loss of earnings, the worker is not disqualified if tests (i)-(iv) are satisfied.

The law in Florida has evolved since 1979 concerning the use of these five tests because of both court cases and the 1983 amendments to the law.

Probably the test that has been involved in most cases concerns whether the job search was adequate. The Florida courts have provided some guidance on the requirement. The employee is excused from conducting a good-faith job search if the employer or carrier has failed to notify the claimant of the search requirement, *DeFrees v. Colt and Dumont/HIT Sales*, 483 So. 2d 848 (Fla. 1st DCA 1986). Similarly, in a case involving temporary total disability benefits but that is relevant for wage-loss benefits, a worker cannot be denied benefits because of a failure to search for work if "he neither knew nor should have known that he was medically released to work," *Davis v. Phillips & Jordan*, 483 So. 2d 534 (Fla. 1st DCA 1986). A job search is not adequate when the claimant misrepresented his medical limitations by telling prospective employers he was medically limited to working only four hours per day when his physician had imposed no such limit, *Snowdon v. Sambo's*, No. BG-442, slip op. (Fla. 1st DCA 1986). There are numerous similar cases interpreting the adequate job search requirement. Nonetheless, "it is impossible to find a single, definitive statement of what constitutes an 'adequate' job search," *Flesche v. Interstate Warehouse*, 411 So. 2d 919 (Fla. 1st DCA 1982).[21]

The fourth requirement for wage-loss benefits—no voluntary limitation of income—was involved in *Topeka Inn Management v. Pate*, 414 So. 2d 1184 (Fla. 1st DCA 1982). Pate was injured on August 2, 1979, while working as a waitress. Her back injury was rated as 5 percent

permanent impairment with a date of MMI of February 18, 1980. From April to August 1980, she worked as a full-time secretary at the minimum wage, which was less than the wage she had earned as a waitress. From August to October 1980 she quit work to take care of her husband, who had suffered a heart attack. From October 1980 to January 1981, she worked full time as a nurse's aid, again at the minimum wage. The court agreed with the deputy commissioner that Pate was entitled to wage-loss benefits during the periods she was working as a secretary or as a nurse's aid, with the benefits replacing a portion of the difference between her pre-injury wage and her actual earnings. But what of the period in which she quit work?

The court opined:

> Strictly speaking, her wage loss during this period of time was not solely due to her compensable injury. That fact, however, does not preclude her entitlement to wage-loss benefits . . . Section 440.15(3)(b)(2) provides:
>
> *. . . In the event the employee voluntarily limits his or her income or fails to accept employment commensurate with his or her abilities, the salary, wages, and other remuneration the employee is able to earn after the date of maximum medical improvement shall be deemed to be the amount which would have been earned if the employee did not limit his or her income or accepted appropriate employment. . . .* [emphasis supplied in original]
>
> Considering the statute as a whole and applying it to these facts, we conclude that, by accepting employment as both a secretary and a nurse's aide, claimant has demonstrated the "salary, wages, and other remuneration (she) is able to earn after the date of maximum medical improvement." Therefore, the wage loss attributable to her injury for these months when she was caring for her ill husband is the difference between her former salary as a waitress and the prevailing minimum wage.

The relationship between the requirements of adequate job search (test ii) and no voluntary limitation of income (test iv) was involved in *Anderson v. S & S Diversified, Inc.*, 477 So. 2d 591 (Fla. 1st DCA 1985). The deputy commissioner used the deemed earnings provision to diminish the wage-loss award for the six months when the job search

was "sporadic and ineffective." For an additional two months, the deputy denied any wage-loss benefits because of the lack of any job search. The District Court of Appeals affirmed the use of the deemed earnings provision for the six-months interval, but reversed the deputy's decision for the two-months period, holding that the deemed-earnings approach "applied equally to inadequate and absent search." In short, an adequate job search is not "a condition precedent to any consideration of the merits of a wage loss claim," but is only one factor to be used in determining the extent of wage-earning capacity.

Although the job search and voluntary limitation of income tests can in part be analyzed in isolation from the other tests that compose the "legally sufficient" requirements, the most interesting developments concern the combinations of the tests, which can be traced in a series of cases.

LeHigh Corp. v. Byrd, 397 So. 2d 1202 (Fla. 1st DCA 1981), involved a claim for temporary total disability benefits, but was cited in subsequent permanent partial disability cases. The claimant was injured in December 1979 and paid temporary total disability benefits. He returned to work for two weeks and then was discharged on February 23, 1980. Between then and June 27, 1980, there were two periods when Byrd was medically able to work but was unemployed. The deputy commissioner awarded temporary total disability benefits for these two periods. The District Court reversed and laid down these requirements for temporary total disability benefits:

> . . . the claimant must show that his work search was successful, but that he was unable to perform the work. Alternatively, he would have to show that his work search was unsuccessful due to his disability (rather than unavailability of work). . . . The claimant in this case has completely failed to establish any of the preceding elements. [citations omitted]

The District Court decision makes clear that Boyd did not make a conscientious job search during most of the time when temporary total disability benefits were controverted, and denying the benefits for these periods is consistent with earlier cases. By June 15, however, Byrd had made a conscientious search (according to the court), and yet he was denied temporary total disability benefits for June 15 to June 27 (when he started a new job) because, according to the court (at p. 1204), "the claimant did not establish that the work search was unsuccessful due to the disability."

The *LeHigh* test for temporary total disability benefits was adopted for wage-loss benefits under the permanent partial disability sections of the 1979 statute in *Lake County Commissioners v. Walburn*, 409 So. 2d 153 (Fla. 1st DCA 1982). Walburn was injured in November 1979 and reached maximum medical improvement on July 23, 1980. Between July 23 and October 1, 1980, Walburn had no earnings even though he made extensive job searches (averaging two or three inquiries per week with the State Employment Office, for example). The deputy commissioner awarded wage-loss benefits for this period, but the District Court reversed, holding that:

> Section 440.15(3)(b)2, Fla. Stat. (1979) . . . places the burden on the employee to establish that any wage loss benefit claimed is a result of the compensable injury. As claimant is qualified by training and experience for a number of jobs, including surveying, accounting and construction, the evidence is totally insufficient to prove that his work search was unsuccessful due to his disability (rather than because work was unavailable) and that he was entitled to wage loss benefits.

Judge Ervin dissented on the issue of Walburn's eligibility for wage-loss benefits, arguing that "The majority's interpretation of Section 440.15(3)(b)2, forcing a claimant to prove that his work search was unsuccessful due to his disability, rather than because of unavailability of work could place a well-nigh impossible burden on an injured claimant. . . ."

The decisions in *LeHigh* and *Walburn* represent a stringent view of the tests that must be satisfied before wage-loss benefits are paid. The cases form a backdrop for the landmark decision in *Regency Inn v. Johnson*, 422 So. 2d 870 (Fla. 1st DCA 1982). The claimant was injured in August 1979, only days after the legislation enacted that year took affect. She reached maximum medical improvement on August 4, 1980, and had a 5 percent permanent impairment due to the 1979 injury. Johnson remained unemployed after the date of MMI and filed for wage-loss benefits. Her claim for benefits for the period August 4, 1980 to December 10, 1980, was denied by the deputy commissioner because of the absence of a job search; this period was not an issue in the appeal. Thereafter, Johnson made an extensive job search that the deputy commissioner found was in good faith, but she was unsuccessful in obtaining employment. The deputy commissioner also found that the employer had not made Johnson a job offer for the period of

wage loss after December 10, 1980.[22] The deputy commissioner therefore awarded her 100 percent wage-loss benefits for December 10, 1980, to April 10, 1981, and the employer filed an appeal concerning this period. The appeal was initially decided by a three-judge panel of the First District Court of Appeal, which upheld the award of wage-loss benefits for the December 1980 to April 1981 period. The court concluded that the *Lehigh* rule is inapplicable for the purpose of wage-loss benefits, and specifically endorsed the reasoning and authority set forth in the dissenting opinion in *Lake County Commissioners v. Walburn*. The court noted that the language pertaining to permanent total benefits was different from the language pertaining to wage-loss benefits. Specifically, for permanent total disability the statute provides:

> "the burden shall be upon the employee to establish that he is not able uninterruptedly to. . .work *due to physical limitations*," and no compensation of that character shall be payable 'if the employee. . .is *physically capable* of. . .gainful employment." Section 440.15(1)(b), Florida statutes.

In contrast, the court notes, "For wage loss the statute provides simply for general causal relation by covering any such loss which 'is the result of the. . .injury.' "

The three-judge panel concluded that the difference in statutory language for permanent total and wage-loss benefits made the *LeHigh* rule inapplicable for the latter type of benefits.

The decisions in *Walburn* and *Regency* obviously conflict, reflecting in part the different composition of the three-judge panels from the First District Court that rendered these decisions. To resolve the conflict between the cases, the *Regency* case was reheard *en banc*, and the First District Court of Appeal unanimously upheld the original decision in *Regency*. *The per curium* opinion reflects the diversity of arguments presented to the court.

One argument that was significant concerned the final sentence of Section 440.15(3)(b)2, which reads: "Whenever a wage-loss benefit as set forth in subparagraph 1. may be payable, the burden shall be on the employee to establish that any wage loss claimed is the result of the compensable injury." The employer/carrier argued that this sentence placed the burden of proof on the employee to show a causal relationship between the wage loss and the injury, and that this burden could not be satisfied merely by proving "economic dislocation" or

"job disruption" by reason of the compensable injury, as had been concluded by the panel that originally decided the case. The full court then restated the burden of proof provision to:

> require the employee to go forward with evidence showing a change in employment status due to the injury, and an adequate and good faith attempt to secure employment commensurate with his abilities so as to establish, prima facie, an economic loss and to show that he or she has not voluntarily limited his or her income or failed to accept employment commensurate with his or her abilities. Once this evidence has been presented by the employee, the burden of proving that the employee has refused work or voluntarily limited his or her income is on the employer.

But what if an employee who could meet the four elements of the burden of proof requirement, which corresponds to the first four tests for "legally sufficient wage loss" that were previously enumerated, still could not find a job, at least in part because suitable jobs were unavailable? The *en banc* opinion (at p. 879) could not have been more clear:

> We hold that the unavailability of jobs due to economic conditions does not preclude recovery of wage loss benefits, and, accordingly, it is not necessary for a wage loss claimant to present evidence that his refusal for employment was not due to unavailability of jobs resulting from economic conditions. Any other decision on this issue would convert wage loss hearings under the act into seminars on economics, requiring the gathering and presentation of complex information beyond the ken of all but the most schooled in the field of economics, and certainly beyond the resources and ability of the average worker to present or defend against. The sheer impracticability of burdening wage loss claim procedure with such evidence is obvious.

The decision in the *Regency* case surprised and dismayed some of the supporters of the 1979 legislation. For example, Mary Ann Stiles, then general counsel for the Associated Industries of Florida, wrote (1983) that in the *Regency* case,

> The Court failed to see that it shifted the burden of the unemployed from the unemployment rolls to the workers'

> compensation rolls. What is accomplished in arguing that employers should rehabilitate and reemploy injured workers when there are no jobs available? That issue is not and never has been a workers' compensation issue in the State of Florida. The Court did not look at the real world when it decided *Regency*.

The adverse reaction to the *Regency* decision, exemplified by the Stiles statement, produced legislation in 1983. Of primary relevance for the "legally sufficient" wage-loss requirements is the sentence added to Section 440.15(3)(b)(2):

> It shall also be the burden of the employee to show that his inability to obtain employment or to earn as much as he earned at the time of his industrial accident, is due to physical limitation related to his accident and not because of economic conditions or the unavailability of employment.

The apparent intention of this amendment was to overrule the holding in the *Regency* case and require the injured worker to show that the only reason for the loss of wages was the physical limitations caused by the injury. This was the legal doctrine enunciated in *Lake County Commissioners v. Walburn* and then rejected in *Regency*. The First District Court of Appeal made a different interpretation of the 1983 amendment in *City of Clermont v. Rumph*, 450 So. 2d 573 (Fla. 1st DCA 1984), *petition for review denied*, 458 So. 2d 271 (Fla. 1984). The Court found that the first four tests for wage-loss benefits (enumerated above) were met, which then required the Court to choose between the (va) and (vb) versions of the fifth test. Rumph had made an extensive job search and testified that once prospective employers found out about his work injury, they would not hire him. The employer argued this was insufficient and that as a result of the 1983 amendments wage-loss benefits were precluded unless the "claimant establishes that economic conditions do not affect his employability." In short, the employer's position would have required the employee to demonstrate that the sole reason for the wage loss was the worker's permanent impairment. This interpretation was rejected by the Court because it would have so limited the workers' remedies as to "seriously imperil the constitutional validity of the workers' compensation law." The interpretation of the 1983 amendment that the Court found constitutional and therefore adopted was that wage-loss benefits were precluded "when predicated solely on economic considerations unrelated to a claimant's

physical limitations by ordinary proximate cause standards." Although this interpretation seems to turn the apparent intent of the 1983 amendment on its head, the result indicates that sometimes two wrongs do make a right. The questionable decision nullified a dubious amendment that was intended to vitiate the essence of the wage-loss approach: to provide benefits to workers who experience actual loss of earnings because of work injuries.

Experience with the Wage-Loss Approach

This section examines the impact on various aspects of the Florida workers' compensation program of the 1979 reform of permanent partial disability benefits. Data are assembled from the National Council on Compensation Insurance, the Florida Division of Workers' Compensation, and various other sources.

Data from the National Council on Compensation Insurance

Chapter 3 presents extensive data from the National Council on Compensation Insurance on the numbers, average cost, and total cost of permanent partial disability cases in Florida between 1958 and 1982. Here we present additional data pertaining to the pre-1979 legislation era, which serves as a benchmark for evaluating the impact of the new law, plus more data on experience under the new law.

Table 9.1 presents data from the eight most recent policy years currently available. Three technical aspects of the data must be discussed before their significance can be assessed. First, a policy year in Florida involves all policies written between December 1 of one year and November 30 of the next year. Thus policy year 1974-75 includes policies sold between December 1974 and November 1975. Second, policies are in effect for 12 months. Thus the experience for policy year 1974-75 includes reports on some injuries that occurred as early as December 1974 and some that occurred as late as November 1976. Third, the first report basis as shown in table 9.1 reflects the actual experience of policies in the specified policy year based on reports submitted six months after the expiration of each policy sold during the year. The fifth report basis is a simulation of what the experience is expected to be after five years of development (and the ultimate report basis is the simulated ultimate cost), based on development factors derived from earlier policy years in Florida. The beginning point for the simulations is the actual data shown in the first reports, which are then

Table 9.1
Numbers and Costs of Permanent Partial Cases in Florida, 1974–79 as Reported by National Council on Compensation Insurance

Policy year	Major Permanent Partial			Minor Permanent Partial		
	Number of cases	Average cost	Total cost	Number of cases	Average cost	Total cost
			Panel A: First Report Basis			
1974–75	2,973	17,454	51,890,505	8,108	3,661	29,680,722
1975–76	3,316	18,563	61,555,061	8,654	3,583	31,005,129
1976–77	3,094	19,691	60,923,728	8,762	3,676	32,207,949
1977–78	3,122	19,276	60,179,192	7,735	3,703	28,639,391
1978–79	2,289	20,403	46,702,989	4,421	3,769	16,661,384
1979–80	2,753	18,323	50,442,886	2,543	3,326	8,458,317
1980–81	2,201	26,675	58,711,198	3,187	4,925	15,697,131
1981–82	2,448	30,728	75,223,310	3,576	3,992	14,276,621
			Panel B: Fifth Report Basis/Ultimate Report Basis Since 1979–80			
1974–75	4,468	21,323	95,270,967	7,824	3,414	26,712,650
1975–76	4,821	23,263	112,153,321	8,516	3,291	28,028,637
1976–77	3,967	24,326	96,503,185	8,306	3,447	28,632,867
1977–78	3,878	23,401	90,750,222	7,263	3,478	25,259,943
1978–79	2,891	24,749	71,548,979	4,333	3,484	15,095,214
1979–80	3,785	25,348	95,942,369	2,469	3,049	7,527,902
1980–81	(2,201)	50,373	110,870,696	2,884	4,811	13,876,264
1981–82	4,103	50,015	205,209,942	3,136	3,546	11,121,488

SOURCES: National Council on Compensation Insurance, *Countrywide Workers' Compensation Experience Including Certain Competitive State Funds, 1st Report Basis* (Jan. 24, 1979, March 1980, March 1981, April 1982, March 1983, April 1984, June 1985, and June 1986); *5th Report Basis* (March 14, 1979, March 1980, March 1981, April 1982, and March 1983); *Ultimate Report Basis* (April 1984, June 1985, and June 1986).

NOTE: The number of major permanent partial cases on an ultimate report basis for 1980–81 apparently represents an error in the NCCI source, since it is identical to the number on a first report basis.

multiplied by the appropriate development factors. As can be seen by comparing panels A and B in table 9.1, case developments between the first report and fifth (or ultimate) report typically decrease the number, average cost, and total cost of minor permanent partial disability cases and increase the number, average cost, and total cost of major permanent partial disability cases. This reflects, in part, the conversion of some cases initially classified as minor permanent partial into major permanent partial as the costs of those cases increase through time.

With these technical aspects in mind, what "lessons" can the data in table 9.1 provide on the consequences of the 1979 reforms? Policy years 1974-75, 1975-76, and 1976-77 entirely involved experience under the old law, as did about 95 percent of the policy year 1977-78 experience,[23] and the data suggest a fairly stable pattern of about 11,000 to 12,000 permanent partial disability cases (major plus minor) per policy year on a first report basis and about 11,000 to 13,000 permanent partial disability cases per policy year on a fifth report basis. Average cost on the fifth report basis increased through time to about $25,000 for major permanent partial disabilities and were fairly stable during the period at about $3,400 for minor permanent partial disabilities. Total costs of both major and minor permanent partial disabilities on a fifth report basis were in the $115-$140 million range between policy year 1974-75 and policy year 1977-78.

Policy year 1978-79 contains policies that expired between December 1979 and November 1980, and about half of all injuries in that policy year occurred after the effective date of the 1979 legislation. In addition to the data from the 1978-79 transition year, there are data from policy years 1979-80 through 1981-82 that are entirely under the new law. Thus, in a rough sense, the first four policy years in table 9.1 can be considered "old law" experience and the last four policy years "new law" experience.

For minor permanent partial cases, the effect of the new law is consistent in both panels of table 9.1. Average costs have increased moderately under the new law, while the number and total costs have been cut in half. Thus the 1979 amendments have succeeded in eliminating many of the cases with minor injuries from the program.

The effects of the new law on major permanent partial cases are more complex. The numbers are clearly down on a first report basis, and there also is probably a decline in numbers on the fifth report/ultimate report basis. Average costs are up under the new law, especially on

the ultimate report basis, and as a result total costs of major permanent partial cases are higher under the new law than they were prior to the 1979 amendments. The higher costs occurred in the last two policy years, when first the average cost and then the total cost doubled compared to the corresponding figures under the old law.

The higher cost estimates for permanent partial cases were a major factor in the increases in worker compensation insurance rates that began in 1982 (table 9.2). Concern over the increases led to the appointment of the Workers' Compensation Experience Review Committee, which reported in October 1984. The *Report* found that much of the explanation for the higher costs was the realization by carriers, employers, and the NCCI that wage-loss cases were more expensive than originally anticipated when the new law went into effect. In particular, the increase in estimated costs of the wage-loss cases between the first and ultimate reports (the incurred loss development factors) had to be substantially increased as actual experience under the new law became available. The finding that wage-loss cases have significant costs for many years after the year of injury is reinforced by data in the next subsection.

Table 9.2
Florida Workers' Compensation Insurance Rate Revisions, 1979–86

Effective date	Percentage change from previous rates	Cumulative change from January 1, 1978 rates
August 1, 1979	−15.0	−15.0
January 1, 1981	−5.1	−19.3
July 1, 1981	−15.6	−31.9
January 1, 1982	−6.5	−36.3
September 1, 1982	+10.0	−30.0
December 1, 1982	+10.7	−22.5
March 1, 1984	+10.1	−14.7
January 1, 1985	+18.7	+1.3
January 1, 1986	+11.8	+13.3

SOURCES: 1979–85 data from National Council on Compensation Insurance, *1986 Annual Statistical Bulletin*, p. 18. 1986 data from National Council on Compensation Insurance, *Memorandum FL-86-1* (Feb. 3, 1986).

Data from the Florida Division of Workers' Compensation

The data from the National Council on Compensation Insurance have some advantages, such as their rough consistency with data from other NCCI jurisdictions. There are also some disadvantages, however, such as the limitation of results to those employers who purchase insurance, thus omitting results for self-insuring employers. When there is a trend to greater self-insurance, as there has been in Florida during the last decade,[24] the NCCI data may provide misleading evidence on changes through time in the number and total cost of permanent partial disability cases. The data collected and published by the Florida Division of Workers' Compensation have the advantage of encompassing all employers, including self-insurers.[25] Unfortunately, most of the annual statistical reports published by the Division in recent years contain only one line of data on permanent partial disability cases that combines information on permanent impairment and wage-loss cases.[26] Fortunately, the Division has introduced a computerized data system in recent years that contains considerable valuable material. The tables in this subsection are based on unpublished tabulations provided by the Florida Division of Workers' Compensation.[27]

Table 9.3 presents information on the number of cases that have received permanent impairment benefits under Section 440.15(3)(a) or wage-loss benefits under Section 440.15(3)(b) between August 1979 and December 1985. The data are by year of injury and show a total of about 3 1/2 times as many wage-loss as permanent impairment cases in the first seven years of the new law. Several observations are warranted. An unknown number of cases appears twice because the workers received both types of benefits. The apparent decline in numbers of cases in recent years is misleading because there often is a considerable lag between the date of injury and the date when the worker first qualifies for permanent impairment or wage-loss benefits. This is particularly true for wage-loss benefits, because the worker must both reach the date of MMI and experience a subsequent period of wage-loss due to the work-injury.

The lag between date of injury and the initial payment of wage-loss benefits is documented in table 9.4. The first full year under the new law was 1980,[28] and by the end of that year (corresponding to 0 years after the year of injury) there were 235 cases involving 1980 injuries that had received wage-loss benefits. The peak year for new wage-loss cases involving 1980 injuries was 1981 (corresponding to 1 year after

the year of injury), when 1,057 cases were established. Of interest is that five years after the 1980 date of injury, 68 new wage-loss cases were established. The data for 1981-83 in table 9.4 also show the pattern of new wage-loss cases peaking the year after the date of injury, with numerous additional cases initially qualifying for wage-loss benefits in subsequent years. The data in columns (1) and (2) of table 9.7 summarize the general relationship between time and numbers of wage-loss cases resulting from injuries in 1980-84. One hundred percent represents the number of wage-loss cases established by one year after the year of injury (by December 1981 for 1980 injuries, for example). By four years after the date of injury the percentage is 198, and by the end of year 5 it is 213 percent. In short, there is a long and thick tail to the number of wage-loss cases.

Table 9.3
Pernament Impairment and Wage-Loss Cases in Florida
1979–85 Injuries

Year of injury	Number of impairment cases established by December 1985	Number of wage-loss cases established by December 1985
1979 (Aug.–Dec.)	409	1,023
1980	1,095	2,755
1981	1,004	3,438
1982	870	3,348
1983	707	2,965
1984	492	2,233
1985	164	495
Total	4,741	16,257

SOURCE: Calculated from data in tables provided by Florida Department of Labor and Employment Security, Division of Workers' Compensation (August 1986).

The wage-loss cases once established tend to receive benefits over extended periods as well, as shown in table 9.5. For example, for 1980 injuries, 863 (or 42 percent) of the 1,059 cases established by the end of 1982 (two years after the year of injury) received benefits during the average month in 1982. During the average month in 1985, 439

Table 9.4
Number of New Wage-Loss Cases in Florida, by Year of Injury, for 1979–85 Injuries

No. of years after year of injury	1979 injuries (August–December)		1980 injuries		1981 injuries	
	Cases with 1st payment in year -1-	Cumulative total by end of year -2-	Cases with 1st payment in year -3-	Cumulative total by end of year -4-	Cases with 1st payment in year -5-	Cumulative total by end of year -6-
0	15	15	235	235	339	339
1	324	339	1,057	1,292	1,488	1,827
2	334	673	767	2,059	1,018	2,845
3	181	854	433	2,492	431	3,276
4	98	952	195	2,687	162	3,438
5	51	1,003	68	2,755		
6	20	1,023				

1982 injuries		1983 injuries		1984 injuries		1985 injuries	
Cases with 1st payment in year -7-	Cumulative total by end of year -8-	Cases with 1st payment in year -9-	Cumulative total by end of year -10-	Cases with 1st payment in year -11-	Cumulative total by end of year -12-	Cases with 1st payment in year -13-	Cumulative total by end of year -14-
427	427	463	463	508	508	495	495
1,638	2,065	1,657	2,120	1,725	2,233		
959	3,024	845	2,965				
324	3,348						

Table 9.5
Number of New Wage-Loss Cases Receiving Benefits in Florida, by Year, for 1979–85 Injuries

No. of years after year of injury	1979 injuries (August–December)		1980 injuries		1981 injuries	
	Monthly average of cases receiving payment -1-	As percentage of all established cases -2-	Monthly average of cases receiving payment -3-	As percentage of all established cases -4-	Monthly average of cases receiving payment -5-	As percentage of all established cases -6-
0	5	33	49	21	72	21
1	101	30	486	38	748	41
2	251	37	863	42	1,180	41
3	293	34	836	34	972	30
4	253	27	608	23	720	21
5	178	18	439	16		
6	131	13				

1982 injuries		1983 injuries		1984 injuries		1985 injuries	
Monthly average of cases receiving payment -7-	As percentage of all established cases -8-	Monthly average of cases receiving payment -9-	As percentage of all established cases -10-	Monthly average of cases receiving payment -11-	As percentage of all established cases -12-	Monthly average of cases receiving payment -13-	As percentage of all established cases -14-
98	23	107	23	113	22	132	27
836	40	808	38	1,004	45		
1,124	37	1,172	40				
943	28						

(or 16 percent) of the 2,755 cases involving 1980 injuries received wage-loss benefits.

The lags between dates of injury and the initial payments of wage-loss benefits and the tendency for wage-loss cases to continue receiving benefits over extended periods of time help explain the patterns for total costs shown in table 9.6. For 1980 injuries, the wage-loss benefits cost $356,400 in 1980 (year 0); peaked at $6,424,780 in 1982 (year 2); and were still $3,093,330 in 1985 (year 5); with a cumulative cost through the end of 1985 of $23,400,290. The data in columns (3) and (4) of table 9.7 summarize the general relationship between time and total costs of wage-loss benefits involving 1980-84 injuries. One hundred percent represents the total costs of the wage-loss cases by one year after the date of injury (by December 1981 for 1980 injuries, for example). By five years after the date of injury, the percentage is 585.

The continuing increase in numbers of wage-loss cases and the explosive increase in costs of the cases for the five years after the year of injury are shown in graph 9.1, which uses the data from columns (2) and (4) of table 9.7. The results illustrate the finding of this and the previous subsection: that wage-loss cases have significant costs for many years after the years of injury. They also dramatize the benefits and costs of the wage-loss approach: benefits to workers in the form of long-term protection, but costs to employers and carriers in the form of extended periods of liability. One way to try to avoid these costs is to terminate future liability by use of compromise and release agreements—known as "washouts" in Florida.

Data on Washouts

As recounted earlier in this chapter, washouts—once widely used to terminate payments in permanent partial disability cases in Florida—were supposed to be greatly restricted by the 1979 law. Washouts of future medical benefits were strictly banned, and settlements of cash benefits were prohibited until at least six months after the date of maximum medical improvement and then only in special circumstances. In 1983, a limited exception to the general prohibition on washouts for all benefits (including medical) was provided: washouts are permissible when there is a legitimate controversy over compensability and the employer or carrier has provided no benefits.

The limitations on washouts contained in the 1979 legislation withstood constitutional challenges in *Johnson v. R. H. Donnelly Co.*, 402 So.

Table 9.6
Total Costs of Wage-Loss Cases in Florida, by Year, for 1979–85 Injuries
(thousands of dollars)

Number of years after year of injury	1979 injuries (August–December)		1980 injuries		1981 injuries	
	In year -1-	Cumulative -2-	In year -3-	Cumulative -4-	In year -5-	Cumulative -6-
0	9	9	356	356	980	980
1	653	661	3,641	3,998	5,565	6,546
2	2,102	2,764	6,425	10,422	8,637	15,182
3	1,732	4,496	5,730	16,152	7,273	22,455
4	1,539	6,035	4,155	20,307	5,526	27,982
5	1,069	7,103	3,093	23,400		
6	786	7,889				

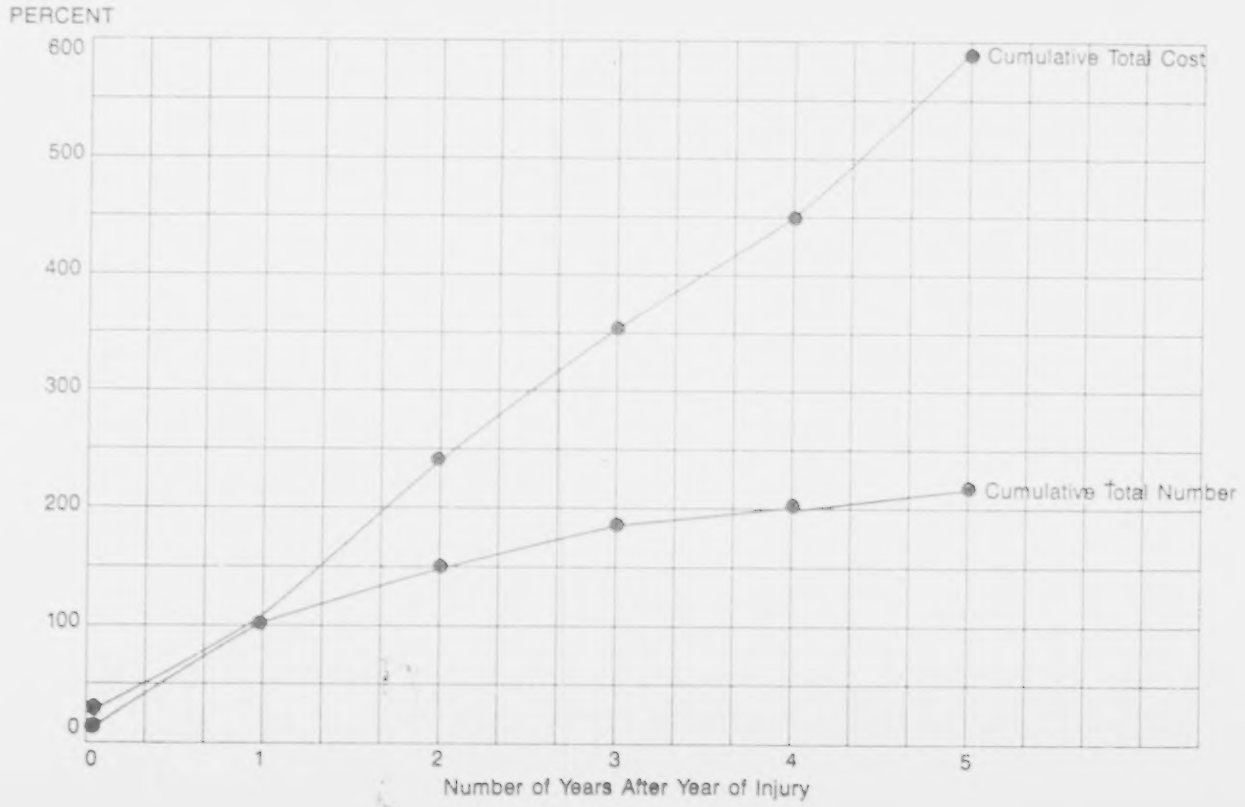
1982 injuries		1983 injuries		1984 injuries		1985 injuries	
In year -7-	Cumulative -8-	In year -9-	Cumulative -10-	In year -11-	Cumulative -12-	In year -13-	Cumulative -14-
694	694	730	730	809	809	967	967
6,373	7,068	6,164	6,894	7,906	8,715		
8,787	15,855	9,486	16,380				
7,608	23,463						

Table 9.7
Developments by 1985 in Number and Cost of Wage-Loss Cases in Florida, 1980–84 Injuries

Number of years after year of injury	New cases in year as percent of total number of cases established by end of year one	Cumulative total number of cases as percent of total number established by end of year one	Total cost in year as percent of total cost by end of year one	Cumulative total cost as percent of total cost by end of year one
0	20	20	11	11
1	80	100	89	100
2	50	150	139	239
3	24	178	121	360
4	12	198	94	468
5	5	213	77	585

NOTE: The percentages are the average for the available data for 1980–84 injuries shown in tables 9.4 and 9.6. Only 1980 injury year data are available for 5 years after the date of injury; only 1980 and 1981 injury year data are available for 4 years after the date of injury; etc.

Graph 9.1
Cumulative Total Number of Cases and Cumulative Total Cost of Wage-Loss Cases, 1980-84 Injuries



2d 518 (Fla. 1st DCA 1981). The absolute prohibition on washouts of medical benefits was challenged as unconstitutional because the provision denied the worker access to the courts, was an impairment of contract, and was an improper exercise of the state's police power. The court rejected all three arguments.

The essence of the washout is that in exchange for a lump-sum payment of benefits the employer or carrier is released from any further liability. Under the 1979 legislation, a practice arose that is not technically a washout, since there is no complete release from liability, but that has many attributes in common with washouts. This practice is the use of advances, whereby a specified period of future benefits is paid in a lump sum. The main distinction from a washout is that if the employee has actual disability beyond the period covered by the advance, payments can resume. But if the actual period of disability should turn out to be less than the period covered by the advance (perhaps because the injured worker died), the carrier or employer cannot as a practical matter recover any portion of the advance. In that sense, the use of an advance defeats one of the purposes of the 1979 legislation—namely, to limit benefit payments to times when the worker experiences actual wage loss.

Advances are generally involuntary in the sense that the carrier or employer opposes the settlement, while it is typically supported by the worker and his lawyer. In *Sanford v. Alachua County School Board*, 425 So. 2d 112 (Fla. 1st DCA 1983), the First District Court of Appeal rejected the argument that an advancement prejudiced the carrier because of the low discount rate (4 percent) used to calculate the lump-sum settlement and because basing the lump-sum calculations on the entire remaining life expectancy (21.5 years) would make it impossible to later challenge the claimant's status as permanently disabled if she were to regain her earning capacity or die.

The 1983 legislation provided relief on the advance problem. Section 44.20(12)(c) was amended to provide for an 8 percent interest rate to be used in discounting the future payments to their present value for purposes of making a lump-sum payment. Section 440.20(13)(d) was amended by adding a sentence limiting the advance to the greater of $7,500 or 26 weeks of benefits in any four-year period. The threat to the wage-loss approach posed by involuntary advancements may have been completely ended by the First Court of Appeal decision in *Murphree Bridge v. Brown*, 492 So. 2d 451 (Fla. 1st DCA 1986). The Court stated,

> Since each month of wage-loss benefits constitutes a separate claim, it follows that the liability for payment of those benefits accrues monthly. Consequently, there is no identifiable indebtedness associated with the wage-loss provisions which could support an award of an advance payment which encompasses an amount more than the amount due as a monthly benefit.

If the problem of involuntary advances seems to be declining, the situation for voluntary washouts is not so clear. The percentage of permanent partial cases involving washouts has dropped from 34 percent under the old law to 27 percent under the new law, according to one comparison made by the National Council on Compensation Insurance (Workers' Compensation Experience Review Committee 1984, at p. 54).

This is progress, but hardly to the degree envisaged by Mary Ann Stiles, one of the architects of the 1979 law, when she wrote (1983 at p. 6):

> Wash-outs have been all but virtually eliminated from the system. The basic reason for that is, of course, that if the Legislature allowed wash-outs under the wage loss system, we would again be guessing into an indefinite future what a person's loss of wages was going to be.

The extent of washouts under the 1979 law (together with the 1983 amendments facilitating washouts) has been monitored by the Workers' Compensation Command Post, an insurance industry effort, and reported in various issues of the *Command Post Briefing*. In an early issue (Vol. 1, No. 2, May 1981) the publication noted three ways the ban on washouts was being avoided:

> The initial strategy seemed to be "let's *try* to wash out cases, including future medical; the Deputy Commissioner will probably approve them." They were right; some commissioners did approve them as a matter of course. It took Division intervention, in the form of "reminders" of the statutory mandate, to stop this practice.
>
> A second method of "washing out" a client came to light in the *Baker* case. Baker filed a highly questionable claim. . . . Perhaps the carrier should have fought this "nuisance" claim. However, "rather than risk uncertainties attendant to litigation to this matter and incurring further costs," the par-

> ties agreed to a washout-type settlement of about $1,000. The method of circumventing the law? A signed statement by the claimant that *no accident occurred*. . . .
>
> The final "innovative" approach is just now coming to light. Claimants are signing stipulations agreeing to washout all compensation benefits. No mention is made to the claimant of his right to future medical. The letter of the law has been upheld, but the claimant, rarely reading the "legalese" of the final order, doesn't know he can claim additional medical, and therefore doesn't.

Subsequent to the 1983 amendments liberalizing the rules for washouts, the *Command Post Briefing* (Vol. 4, No. 3, Apr. 1984) found the number of washouts under the new provision growing rapidly. For all of 1984, there were 5,269 cases washed out for an average cost of $13,235. The *Command Post Briefing* (Vol. 5, No. 9, Nov. 1985) noted this was down from 17,058 washouts in 1978 that averaged $5,282, and concluded that it is hoped carriers and self-insurers would continue to show restraint and wash out "only the more serious cases." While we question the wisdom of this strategy, it is hard to disagree with the conclusion found in the *Command Post Briefing* (Vol. 3, No. 4, May 1983) that "washouts are flourishing despite the restrictive criteria" in the 1979 legislation.

Conclusions

The wage-loss approach to permanent partial disability benefits adopted in Florida in 1979 has been widely publicized and vigorously debated. How has the Florida experiment worked? This chapter has tried to assemble information that is at least reasonably reliable. There can be little doubt that the number of permanent partial disability cases has plummeted in Florida as a result of the 1979 legislation, which was one of the purposes of the law. There also is persuasive evidence that one of the other purposes of the law—to virtually eliminate washouts—has not been achieved. In addition, the review of case law in this chapter makes clear that the new approach to permanent partial benefits is not free of litigation and vexatious issues.

Most observers would probably accept the preceding conclusions. Other evaluations have been made that are more controversial, however, and some of these are worth reporting. Surely one of the most glowing accounts was included in *The Circle Solution* (Mintner 1982, p. 1):

> Since the effective date of the Wage-Loss statute, workers have been compensated fairly; the need for workers to hire and pay lawyers has diminished; insurance companies have become increasingly eager to sell their products in Florida, . . . and rates have been slashed by at least 50%.

Although this passage contains its share of hyperbole that is difficult to document or disprove, some of it can be evaluated. For example, the cost of workers' compensation insurance before and after the 1979 legislation can be measured. As shown in table 3.18, in 1978 a representative sample of Florida employers was expending 2.641 percent of payroll on workers' compensation insurance. This was 86 percent above the 28-jurisdiction average of 1.420 percent. Then a series of reductions took place in Florida rates, cumulating to a 36 percent decline by January 1982, followed by a series of rate increases thru 1986 (table 9.2). In 1984, partway through this cycle of rates, Florida employers was expending 1.552 percent of payroll on workers' compensation insurance premiums, only 14 percent above the 28-jurisdiction average of 1.368 percent. Thus as of 1984, Florida had improved its Florida workers' compensation rates relative to those in other states. Perhaps even more relevant, the National Council on Compensation Insurance estimated that those 1984 Florida rates would have been 62 percent higher if the wage-loss reforms of 1979 had never been enacted because of the inflationary pressures from higher weekly maximums and medical benefits. Thus there appears to be some merit to the 50 percent savings alleged by *The Circle Solution*.

This chapter has focused on the reduction in costs sought by employers in enactment of the 1979 legislation. But we would endorse the view expressed in the *Journal of American Insurance* article on the Florida law that "wage loss would be viewed primarily as a means of improving equity, but not necessarily as a cost-saver." An evaluation in part III of this study shows that equity was lacking under the pre-1979 legislation in Florida. We are unaware of any effort under way to evaluate the equity of the new law. This would require a systematic effort to collect data on all workers with permanent impairments that would measure their benefits and their earnings before and after their injuries. At least some of the masses of data that are needed to evaluate a wage-loss system are available in the Division's files, but a major effort will have to be mounted to use the data in an analysis of equity.

Other evaluations of the 1979 legislation are not so favorable as those in *The Circle Solution*. As might be suspected, some of the criticism has come from those who initially opposed the law. But some of the original supporters have also been critical, and it is not evident which camp has raised the greatest outcry against the wage-loss approach.

The most consistently outspoken opponents of the wage-loss approach have been the claimants' attorneys. Any hopes that the objections raised to the 1979 legislation before its enactment might be overcome with time have been largely disappointed. One claimant's attorney wrote to one of us that:[29]

> To me, and for all the claimants I represent, wage loss as it is used and adopted in Florida is a miserable failure. The theory behind wage loss is very sound just as the theory of communism is sound. However, from a practical aspect, it will not work, cannot work, and represents a true rape of the working man in the State of Florida.

As remarked, some criticisms of the 1979 law also have been expressed by some of the original supporters, most notably representatives of the employer and insurance communities who are concerned about the case law that developed the criteria for wage-loss benefits. Certainly some of the toughest legal issues concern instances in which the employer or carrier feels that the worker's actual earnings in the period after the date of MMI are not truly reflective of the worker's earning capacity, or feels that the loss of actual earnings is due to factors other than the work-related injury. Above, we examined at some length the cases that led to the *Regency* case, which in turn led to amendments of the law in 1983 and the *Rumph* case.

The decisions and 1983 amendment can be placed in perspective by comparing Florida with New York, a state with a long history of wage-loss benefits. The comparisons cannot be made point by point because the particulars of the statutes differ, but some general comparisons can be made. The third set of requirements for wage-loss benefits in Florida was termed the "legally-sufficient" wage-loss requirements. These can be related to the second question posed for New York: Can the wage loss be attributed to the injury? In New York, the answer was, "So long as the permanent consequences of the work-related injury are at least a partial cause of the wage loss, nonscheduled benefits can be paid." The New York answer is thus similar to the holding of *Regency* and

Rumph, which have rejected the idea that wage-loss benefits can be paid only if the injury is the sole cause of the wage loss. Thus what is viewed by some as an aberration of the wage-loss approach in Florida is a long-standing legal doctrine in New York.

If this defense of *Regency* is correct, then we believe it is also correct to assert that the First District Court of Appeal interpretation of the 1983 amendments in Florida was appropriate in *Rumph*. This is not to say that every aspect of the Florida law is operating properly; for one thing, as previously discussed, the extensive reliance on washouts is disturbing. Nor is it to say that every component of the wage-loss section in the statute is ideal; for example, as discussed by Burton (1983, pp. 41-46), the benefit formula creates disincentives for workers to return to work. But what this analysis does suggest is that the *Rumph* decision, although in some respects disingenuous, is nonetheless compatible with the underlying philosophy of a wage-loss approach and with the case law for wage-loss cases in other jurisdictions.

NOTES

1. State of Florida, Department of Labor and Employment Security, Division of Workers' Compensation, *Analysis of Work Injuries Covered by Workers' Compensation, 1977-1978* [also titled *1977-1978 Cases Causes Costs*, and so cited hereafter], table V, p. 214, shows that the estimated number of workers covered by workers' compensation was 2,039,100 in 1970 and 3,008,800 in 1978.

2. The first section relies in part on field work conducted in Florida in 1975 by Katherine Hagerty.

3. The provision pertaining to the duration of nonscheduled permanent partial disability benefits was amended effective July 1, 1978, to provide that the specified number of weeks to be multiplied by the percentage of disability increased with the severity of the injury. The 1978 provision, discussed in the text *infra*, was effective only until 1979, when the wage-loss approach was adopted.

4. The discussion of Florida decisions in the balance of this section relies in part on Alpert and Murphy (1978).

5. More precisely, wage-loss benefits are paid only when actual earnings after the date of MMI are less than the worker's potential earnings. Generally, in workers' compensation, potential earnings are defined as preinjury earnings. See, however, a later section for a discussion of the Florida wage-loss approach adopted in 1979, in which potential earnings and preinjury earnings are not always identical.

6. See generally Stiles (1982), p. 44.

7. Compare *City of Hollywood v. Castora*, 380 so. 2d 1148 (Fla. 1st DCA 1980) (adequate job search before original hearing apparently required) with *Flesche v. Interstate Warehouse*, 411 So. 2d 919 (Fla. 1st DCA 1982) (adequate job search permitted after original hearing).

8. *Bill Bard Associates, Inc. v. Totten*, 418 So. 2d 418 (Fla. 1st DCA 1982).

9. *United States Sugar Corporation v. Hayes*, 407 So. 2d 1079 (Fla. 1st DCA 1982).

10. *1977-1978 Cases Causes Costs*, p. 23; earlier editions of *Cases Causes Costs*.

11. *1977-1978 Cases Causes Cost*, p. 23.

12. Section 440.34 of the Florida Workmen's Compensation Law effective July 1, 1978, provided that 75 percent of the claimant's attorney's fees on claims other than medical benefits were to be paid by the employer or carrier and 25 percent by the worker. If, however, the employer or carrier handled the claim in a negligent, arbitrary, or capricious manner, the employer or carrier was liable for 100 percent of the claimant's attorney fee. This provision was further modified in 1979, as will be discussed in the next section.

13. U.S. Department of Labor, *State Compliance* 1983.

14. *1977-1978 Cases Causes Costs*, p. 211.

15. "Florida's Bold Experiment in Cutting Worker (sic) Compensation Costs," *Journal of American Insurance* (Summer 1982), pp. 21-22.

16. At various stages of the process that led to the enactment of the 1979 law, the authors of this volume were participants. We do not want to exaggerate our roles, but we would be remiss if we did not mention them. A major reason for our involvement is that Florida is one of the states included in the NSF study that is the progenitor of this volume (Berkowitz, Burton, and Vroman 1979). The preliminary results from the NSF study became available just as the movement for reform took off in Florida, and as a result we played cameo roles in the Florida drama.

17. The balance of this subsection relies extensively on Mintner (1982). Citations are provided only for specific quotations.

18. Comments by Dan Miller to Conference on Workers' Compensation Co-sponsored by the AFL-CIO and the New York State School of Industrial and Labor Relations, Cornell University, at the George Meany Center, July 23, 1981.

19. Section 440.15(3)(b)(5) provides that for injuries occurring after July 1, 1980, the escalation factor is 5 percent per year or the annual rate of inflation measured by the National Consumer Price Index, whichever is less. Rather than escalating preinjury wages by 5 percent and comparing these earnings to actual earnings in the months when wage-loss benefits are paid, the Florida law provides that the actual earnings will be discounted by 5 percent and compared to preinjury earnings as a basis for the benefits. This discount procedure provides lower benefits than the escalation procedure would using the same percentage adjustment factor.

20. Some Florida decisions have considered the inability to find employment for reasons other than worker's physical limitations as evidence that the job search was inadequate (the second test), rather than viewing this fifth test as a separate requirement.

21. Although the decision in *Flesche* was in 1982, the law in effect before the 1979 amendments was involved. The job search test was similar under the old law, however, and so the decision is still useful. The Court in *Flesche*, note 11 at page 925, elaborated on the difficulty of defining "adequate" when it noted, "The condition of the economy and the locale in which the work search is conducted may create a wide disparity in the extent of the search that might be termed 'adequate' or 'inadequate.' What might be properly considered adequate in Clewiston might well be totally inadequate in Miami, for comparable claimants similarly injured."

22. Regency had made a job offer prior to the hearing before the deputy commissioner on the claim for wage-loss benefits for the August to December 1980 period, for which benefits were denied. According to the District Court, *Regency Inn v. Johnson*, 422 So. 2d 870, 880-81 (Fla. 1st DCA 1982), after the claim for the December 1980 to April 1981 period was filed, her attorney "repeatedly requested the Regency reemploy claimant, or that Regency and the carrier provide rehabilitation, retraining, or job placement counseling and assistance. The E/C 'stonewalled,' provided neither, and offered no explanation for their refusal."

23. Policy year 1977-78 contained a limited amount of experience under the new law (since policies written in August-November 1978 did not expire until August-November 1979, when the new law was in effect). Since about 95 percent of the policy year 1977-78 experience involved injuries under the old act, however, the experience can be considered essentially old law data.

24. In 1977, self-insurers accounted for 12.0 percent of all benefit payments in Florida (Price 1980, table 3, p. 8). In 1984, self-insurers accounted for 30.3 percent of all Florida payments (Price 1987, table 2).

25. For reasons unknown, however, the annual number of permanent partial cases reported by the National Council on Compensation Insurance (table 9.1) is greater than the number of permanent impairment and wage-loss cases recorded by the Florida Division of Workers' Compensation (table 9.3) even though the data from the Division include self-insurers.

26. State of Florida, *1984 Workers' Compensation Injuries*, table 9, p. 44, shows 1,210 permanent impairment cases involving 1984 injuries with a total of $14,656,356 of indemnity benefits. This apparently represents developments through June 30, 1985. The report also contains some information on cases involving 1982 and 1983 injuries with developments through June 30, 1985.

27. These data were provided with the assistance of several present or former members of the Division of Workers' Compensation, including J. Baxter Swing, Sheldon Kemp, Timothy Kearnes, and Pat Parmer. Robert Altvilla is the staff member who prepared the tables in response to our requests.

28. Tables 9.4 to 9.6 contain data on wage-loss cases resulting from 1979 injuries after the August effect date of the law, but because there is only five months' experience from 1979, the text and table 9.7 do not deal with the 1979 data.

29. Letter from a Sarasota, Florida attorney to John F. Burton, Jr., September 22, 1981.

Part III
The Wage-Loss Study

Chapter 10
The Wage-Loss Study of California, Florida, and Wisconsin

This chapter is based on a wage-loss study that examined the relationships among work-related injuries, earnings losses, and workers' compensation benefits for male workers who were injured in 1968 and who received permanent partial or permanent total disability benefits in Wisconsin, California, or Florida. The study was sponsored by the National Science Foundation, and considerable additional material on the wage-loss study is contained in the *NSF Report* (Berkowitz, Burton, and Vroman 1979) submitted at the end of the project.

Although the data analyzed in this chapter are for injuries that occurred 19 years ago, the findings warrant discussion for several reasons. One is that for any study to track workers for several years after the date of injury (in this case, six years), it must involve "old" injuries. Second, the methodology used to prepare the *NSF Report* has not been widely used in workers' compensation research, and the dissemination of the results may encourage others to conduct such studies. Third, and most important, the findings are relevant for understanding the approaches used currently in most states to compensate workers with permanent partial disabilities. As of 1968, Wisconsin based such benefits on the extent of impairment (category I). California based permanent partial benefits on the extent of loss of earning capacity (category II), and Florida offered workers the choice of the two approaches. At present, most jurisdictions pay permanent partial benefits by evaluating the extent of impairment or the extent of loss of earning capacity. Our findings can provide useful guidance about how these approaches are currently operating, since nothing fundamental has changed in the application of these approaches since 1968.

The Conceptual Framework

The conceptual framework was introduced in chapter 1 of this study (see, in particular, graph 1.1). The worker represented in graph 1.1

had wages increasing through time from A to B, corresponding to the worker's higher productivity and general increases in the price level. In the NSF study, such preinjury earnings data were available for 1966 and 1967. At point B, which is 1968 for the NSF study, the worker experienced a work-related injury that permanently reduced his earnings. If the worker had not been injured, his earnings would have continued to grow along the line B-C. Although these potential earnings cannot be observed, they can be estimated from information such as the worker's preinjury earnings and age. The worker's actual earnings normally are significantly affected if the injury results in the payment of permanent partial disability benefits; the line BDEFG in graph 1.1 traces such a result. In the NSF study, data on actual earnings were available for the 1968 to 1973 period. When the actual earnings in the six-year period are subtracted from the estimate of potential earnings for the same interval, the results are the estimates of the wage loss due to the injury. In graph 1.1, the "true" wage loss is potential earnings (line BC) minus actual earnings (line BDEFG). Many workers do not follow the pattern represented by graph 1.1, of course, but in all cases we defined wage loss as the difference between potential earnings and actual earnings between 1968 and 1973.

The workers' compensation benefits received by the workers between 1968 and 1973 were also measured in the NSF study. Between the date of injury and the date of MMI (maximum medical improvement) the worker is entitled to temporary disability benefits; afterward, he qualifies for permanent disability benefits. The date of MMI is not a term used in every state, but each has an equivalent date when the worker's medical condition is first considered ratable for purposes of permanent disability benefits. In the NSF study, much of the analysis involves comparisons between the total of all types of workers' compensation cash benefits received between 1968 and 1973 and the estimated loss of wages during this period. The ratio of benefits-to-wage loss is the replacement rate, which is a key variable in determining the adequacy and equity of the workers' compensation benefits in the state.

The Wage-Loss Study of Wisconsin

The Wisconsin Workers' Compensation Program[1]

In 1968, the year of injury for the workers in our sample, temporary total disability benefits were 70 percent of the worker's preinjury wage, subject to a maximum weekly benefit of $73.00 effective March 1, 1968

(the maximum was $68.00 for 1968 injuries that occurred before March 1) and subject to a minimum weekly benefit of $8.75. Permanent partial disability benefits were paid for up to 1,000 weeks depending on the severity of the injury, and the weekly benefit was 70 percent of the worker's weekly wage, subject to a maximum weekly benefit of $47.50 effective March 1, 1968 (the maximum was $46.00 for 1968 injuries that occurred before March 1) and subject to a minimum weekly benefit of $14.00. Permanent total disability benefits were paid for the duration of the disability at weekly amounts equivalent to the temporary total disability benefit amounts (except that the minimum weekly benefit for permanent total disability was $14.00).

The duration of the Wisconsin permanent partial disability benefits normally was based on the extent of the worker's impairment or functional limitations. Typical of most workers' compensation statutes, there was a schedule (or list) of certain impairments with a corresponding list of durations. For example, the loss of a hand resulted in 400 weeks of benefits, and the loss of a palm where the thumb remains was "worth" 275 weeks of benefits. The schedule primarily described amputations, and injuries that involved loss of use of the scheduled injuries were evaluated relative to the schedule. Thus, an injury that caused 50 percent loss of use of the hand resulted in 200 weeks of benefits. Finally, injuries not on the schedule or that could not be related to the schedule were rated on their seriousness relative to permanent total disability; in practice, such ratings generally were based on the degree of functional limitations or impairment compared to a whole man. Total disability for purposes of unscheduled permanent partial disability benefits was 1,000 weeks, and so a back injury rated as equivalent to 25 percent of total disability resulted in 250 weeks of benefits.

Presumably the purpose of the benefits in Wisconsin was (and is) to provide compensation for work disability, that is, loss of earning capacity or loss of actual earnings. Wisconsin had adopted the normal approach in workers' compensation, which is not to measure work disability, but to measure impairment or functional limitations and use these measures as a predictor of the resulting work disability.[2]

The procedure for providing permanent disability benefits in Wisconsin is unusual because of the extensive role played by the state workers' compensation agency. In most jurisdictions, the extent of the permanent disability usually is decided through litigation (often involving a hearing before the state workers' compensation agency) or through

negotiations between attorneys representing the worker and the employer (often resulting in a compromise and release agreement). In the typical jurisdiction, the workers' compensation agency is less important than the private parties in determining the outcome of the case, but in Wisconsin the agency is an active participant in the determination of permanent partial disability benefits. Medical reports must be filed, and if the amount of permanent partial benefits proposed by the employer or carrier seems inappropriate, the state agency intervenes to protect the worker's interest. One consequence of this active involvement of the state agency in Wisconsin is that only a minority of cases in the NSF study required a hearing or resulted in a compromise and release agreement.

Methodology and Empirical Results for Wisconsin

This section briefly describes the methodology and empirical results for the Wisconsin sample.[3] The first step was to reconstruct a record of all cases involving 1968 injuries that resulted in permanent disability benefits, to eliminate certain cases from the sampling frame because they involved workers of the wrong age or with other disqualifying factors, and then to draw a sample that included all the workers with serious injuries and some of the workers with minor injuries. The second step was to collect data on the workers in our sample and to conduct some initial processing and tabulation of the data. The collection involved inspection of the case folders to verify certain data and to collect additional data needed for this study, such as the timing of benefits. The data were then key punched and a number of tabulations were prepared showing items such as total benefits payments to the workers in our sample. The third step was to have the Social Security Administration process the data and prepare tabulations. Social Security received finder cards that include *inter alia* each worker's social security number, age, sex, disability rating, and present value of workers' compensation benefits received between 1968 and 1973. Social Security then searched the Summary Earnings Records for 1966 to 1973 earnings, made estimates of total annual earnings when the taxable maximum was reached, performed various calculations, and provided us with tabulations.

The results from our two male samples in Wisconsin are presented in tables 10.1 and 10.2.[4] Most Wisconsin permanent partial disability cases paid benefits without litigation or use of compromise and release agreements, and these uncontested cases are shown in table 10.1. The male contested cases are shown in table 10.2. Both tables contain summary data (line 1) and data for the sample disaggregated by 10-year

age categories (lines 2-5) and by the part of the body injured (lines 6-9). The permanent disability ratings were derived from the number of weeks of permanent disability benefits, with 10 weeks of benefits equivalent to a 1 percent rating.

Panel A of the tables presents the weighted counts for the workers in the sample. Table 10.1 indicates that the total sample of male uncontested cases was 1,685, with a mean rating of 3.70 percent (as shown in the next to last column of panel A). The sample of males who received their benefits in contested cases contains 284.5 workers (rounded to 285 workers for textual purposes), who had an average disability rating of 10.14 percent (table 10.2).

In both samples, the extent of disability is associated with age and location of injury. There is a slight tendency for disability ratings to increase with age, although 40-49-year-olds were an exception in both samples. Injuries to the trunk and "all other cases" are the two most serious categories and injuries to the upper extremities the least serious for both samples. When the A panels in the two tables are compared, there is clear-cut evidence of a positive association between severity of injury and probability of the case becoming contested. In the 1-2 percent rating interval, 95 percent of the cases are uncontested (941 of 981 cases), but of the cases with ratings of 16 percent or more, 51 percent are contested (50 of 98 cases). Also, controlling for severity, there is an association between injury location and controversion. For example, among cases with ratings of 16 percent or more, 20 of 31 extremity cases were uncontested, whereas all 19 trunk cases were contested.

Panel B shows mean potential earnings between 1968 and 1973, calculated by multiplying each worker's 1966-67 actual earnings (from the Summary Earnings Record) by his 1968-73 expected earnings growth ratio (EGR). The potential earnings are estimates of what the workers would have earned during the six years if they had not been injured on the job.

The expected growth ratio (EGR) was derived from the experience of workers in our control group, who were injured in 1968 and who received a 1-5 percent permanent disability rating in California. The actual earnings of these workers were increased to reflect their loss of earnings during their healing periods after their injuries. We assumed the workers with these minor disability ratings had no permanent loss of income beyond the healing period. Then for each worker in the con-

Table 10.1
Wisconsin Uncontested Permanent Partial Disability Cases for Men with 1968 Injuries

Classification of workers	Percent rating						Mean ratings	Total
	1–2	3–5	6–10	11–15	16–50	51–100		
Panel A	Weighted counts of workers and mean disability ratings							
1. Workers age 20–59	941	467	177	52	48		3.70	1,685
2. Workers age 20–29	294	105.5	36	15	14		3.54	464.5
3. Workers age 30–39	226	122	39.5	10	14		3.69	411.5
4. Workers age 40–49	219.5	140.5	53.5	11	13		3.68	437.5
5. Workers age 50–59	201.5	99	48	16	7		37.1	371.5
6. Upper extremities	785	192	82	20	20		2.80	1,099
7. Trunk cases	17	93	42	10	0		5.83	162
8. Lower extremities	120	150	34	9	4		3.76	317
9. All other cases	19	32	19	13	24		9.62	107
Panel B	Mean potential earnings (1968–73, in dollars)†							
1. Workers age 20–59	42,567	43,938	43,320	42,472	37,960			42,892
2. Workers age 20–29	40,144	44,412	38,743	41,693	32,671			40,829
3. Workers age 30–39	43,641	46,232	47,880	52,464	42,605			44,995
4. Workers age 40–49	45,298	44,383	48,995	48,364	41,628			45,414
5. Workers age 50–59	41,925	39,973	36,673	32,905	32,434			40,159
6. Upper extremities	42,740	44,084	41,644	39,699	35,516			42,706
7. Trunk cases	37,364	44,193	45,224	44,276	—			43,748
8. Lower extremities	42,497	43,123	43,355	37,036	37,720			42,670
9. All other cases	40,529	46,136	46,279	49,113	40,036			44,159

Panel C			**Mean earnings losses (1968–73, in dollars)†**			
1. Workers age 20–59	1,554	2,759*	4,292*	7,483*	7,175*	2,519*
2. Workers age 20–29	1,714	1,890	1,337	6,627	8,757*	2,096
3. Workers age 30–39	3,009	7,595*	6,399*	13,028*	9,611*	5,162*
4. Workers age 40–49	2,822	954	4,647*	4,131	4,241	2,520*
5. Workers age 50–59	−1,694	287	4,379	7,124*	4,586	117
6. Upper extremities	1,535	1,688	2,913	5,098	7,503*	1,838*
7. Trunk cases	4,583	5,417*	3,395	8,916	—	5,022*
8. Lower extremities	1,808	2,307	9,349*	11,740	1,984	3,137*
9. All other cases	−1,978	3,581	3,178	7,102*	7,766*	3,889*
Panel D			**Standard deviation of mean earnings losses (1968–73, in dollars)†**			
1. Workers age 20–59	860	1,150	1,138	2,236	2,046	662
2. Workers age 20–29	1,482	2,057	2,987	4,479	3,398	1,237
3. Workers age 30–39	2,194	2,449	2,272	6,193	3,059	1,559
4. Workers age 40–49	1,768	1,951	1,760	5,321	5,055	1,228
5. Workers age 50–59	1,294	2,596	2,248	2,250	4,129	1,213
6. Upper extremities	875	1,952	1,726	2,754	2,328	809
7. Trunk cases	4,430	1,364	2,132	5,040	—	1,115
8. Lower extremities	1,639	1,160	2,351	8,283	4,188	935
9. All other cases	2,613	3,354	3,767	3,513	3,436	1,596
Panel E			**Proportional earnings losses**			
1. Workers age 20–59	.036	.063	.099	.176	.189	.059
2. Workers age 20–29	.043	.043	.035	.159	.268	.051
3. Workers age 30–39	.069	.164	.134	.248	.226	.115
4. Workers age 40–49	.062	.021	.095	.085	.102	.055
5. Workers age 50–59	−.040	.007	.119	.216	.141	.003
6. Upper extremities	.036	.038	.070	.128	.211	.043
7. Trunk cases	.123	.123	.075	.201	—	.115
8. Lower extremities	.043	.053	.216	.317	.053	.074
9. All other cases	−.049	.078	.069	.145	.194	.088

Table 10.1 (continued)

Classification of workers	Percent rating							
	1–2	3–5	6–10	11–15	16–50	51–100	Mean ratings	Total
Panel F	Mean benefits net of legal fees (1968–73, in dollars)†							
1. Workers age 20–59	696	2,479	4,957	7,807	10,980			2,150
2. Workers age 20–29	742	2,316	5,078	8,388	12,846			2,047
3. Workers age 30–39	626	2,509	5,451	7,224	10,286			2,136
4. Workers age 40–49	706	2,316	4,999	7,360	10,327			2,201
5. Workers age 50–59	696	2,846	4,412	7,934	9,851			2,234
6. Upper extremities	593	2,057	4,503	6,716	11,641			1,453
7. Trunk cases	1,288	3,141	5,371	8,410	—			3,850
8. Lower extremities	1,261	2,636	5,803	10,254	13,537			2,809
9. All other cases	842	2,348	4,485	7,326	10,003			4,782
Panel G	Replacement rates: benefits as proportion of earnings losses							
1. Workers age 20–59	.45	.90	1.15	1.04	1.53			.85
2. Workers age 20–29	.43	1.23	5.80	1.27	1.47			.98
3. Workers age 30–39	.21	.33	.85	.55	1.07			.41
4. Workers age 40–49	.25	2.43	1.08	1.78	2.44			.87
5. Workers age 50–59	a	9.91	1.01	1.11	2.15			19.11
6. Upper extremities	.39	1.22	1.55	1.32	1.55			.79
7. Trunk cases	.28	.58	1.58	.94	—			.77
8. Lower extremities	.70	1.14	.62	.87	6.82			.90
9. All other cases	a	.66	1.41	1.03	1.29			1.23

*Significant at the .05 level.

†1968 present value dollars discounted at 6 percent.

a. The replacement rate is not shown because the mean earnings loss estimate is negative.

troi group, an actual EGR was calculated as the ratio of the worker's actual 1968-73 earnings divided by the worker's actual earnings in 1966-67. Regressions were run on the actual EGRs for the control group and the regression results were used to derive the expected EGRs for the workers not in the control group. Each worker in Wisconsin was assigned an expected EGR that was a function of the worker's sex, age in 1968, and level of actual earnings in 1966-67. These were factors that the regressions on the control group indicated were useful explanatory variables for the actual EGRs.[5]

Panel B of table 10.1 indicates that the 941 workers with 1-2 percent disability ratings could have expected on average to earn $42,567 from 1968 to 1973 (measured in 1968 present value dollars discounted at 6 percent, as are all dollar figures in tables 10.1 and 10.2). The mean potential earnings for the uncontested sample ($42,892) times the sample size (1,685) yields potential earnings of $72.273 million for the entire sample. For the contested males, panel B of table 10.2 indicates the potential earnings for the 285 workers were $11.478 million. The total potential earnings for both samples were thus $83.751 million.

For each worker, the actual 1968-73 earnings shown in the Social Security Summary Earnings Records were subtracted from that worker's potential earnings over the six-year period. Panel C shows the mean earnings losses for the workers in each cell, and panel D shows the standard deviation of the earnings losses for all workers in the particular cell. Asterisked figures in panel C are statistically significant earnings losses, as determined by comparing the cell mean to the cell standard deviation.

The earnings loss for the male uncontested sample was $2,519 per worker times 1,685 workers for a total of $4.244 million. For the contested male sample, the mean loss was $8,826, and with a sample of 285 the total loss was $2.511 million. The aggregate earnings loss for both samples was $6.755 million. That is, we estimate that the actual earnings between 1968 and 1973 of the 1,970 Wisconsin workers were $6.755 million less than they would have been if the workers had not been injured.

Panel E provides estimates of proportional earnings losses, which are calculated by dividing the mean earnings losses from panel C by the mean potential earnings from panel B. For the entire sample of male uncontested cases, the workers experienced an average 5.9 percent loss of potential earnings because of their injuries (table 10.1, panel E), and

Table 10.2
Wisconsin Contested Permanent Partial Disability Cases for Men with 1968 Injuries

Classification of workers	Percent rating							
	1–2	3–5	6–10	11–15	16–50	51–100	Mean ratings	Total
Panel A	Weighted counts of workers and mean disability ratings							
1. Workers age 20–59	40	79	88.5	27	46	4[b]	10.14	284.5
2. Workers age 20–29	8	24	19	6	8	—	8.57	65
3. Workers age 30–39	15	21	21	9	12	—	9.46	78
4. Workers age 40–49	10	20	27.5	8	15	—	9.11	80.5
5. Workers age 50–59	7	14	21	4	11	—	9.79	57
6. Upper extremities	22	29	25	0	11	0	7.25	87
7. Trunk cases	3	19	32	17	15	4[b]	13.87	90
8. Lower extremities	0	20	16.5	3	4	0	7.99	43.5
9. All other cases	15	11	15	7	16	0	10.27	64
Panel B	Mean potential earnings (1968–73, in dollars)[a]							
1. Workers age 20–59	37,807	40,982	40,545	38,374	41,940	43,754		40,346
2. Workers age 20–29	32,384	38,100	36,117	40,797	40,150			37,318
3. Workers age 30–39	43,549	44,504	46,129	42,115	42,992			44,249
4. Workers age 40–49	39,767	40,778	39,879	34,925	43,285			40,231
5. Workers age 50–59	28,904	40,930	39,841	33,221	40,260			38,382
6. Upper extremities	38,954	43,106	37,340	—	40,635	—		40,087
7. Trunk cases	23,451	40,948	40,574	34,933	43,781	43,754		39,692
8. Lower extremities	—	39,475	41,921	40,925	39,052	—		40,464
9. All other cases	38,998	38,182	44,312	45,639	41,833	—		41,538

Panel C			**Mean earnings losses (1968–73, in dollars)†**				
1. Workers age 20–59	4,318	6,847*	8,332*	13,558*	12,882*	25,363*	8,826*
2. Workers age 20–29	9,935	7,345*	6,180	17,599*	10,282	—	8,631*
3. Workers age 30–39	4,740	8,627*	4,773	11,670	12,598*		7,804*
4. Workers age 40–49	1,429	3,487	12,328*	9,770	12,982*		8,290*
5. Workers age 50–59	5,205	8,123*	8,607	19,319*	14,947*		10,045*
6. Upper extremities	4,522	7,956*	8,981*	—	4,485	—	6,943*
7. Trunk cases	968	7,703*	5,996	12,408*	20,846*	25,363*	10,671*
8. Lower extremities	—	—	4,450	6,663*	11,852*	19,092*	— 7,146*
9. All other cases	5,075	6,803	14,073*	17,081*	9,637*	—	9,935*
Panel D			**Standard deviation of mean earnings losses (1968–73, in dollars)†**				
1. Workers age 20–59	2,549	1,581	2,240	2,410	2,207	11,052	1,029
2. Workers age 20–29	6,274	2,680	4,133	4,636	7,916		2,099
3. Workers age 30–39	5,126	2,778	3,334	2,705	3,265		1,650
4. Workers age 40–49	3,047	3,389	3,101	4,930	3,774		1,746
5. Workers age 50–59	4,164	3,957	6,747	7,649	3,467		2,896
6. Upper extremities	3,567	2,686	2,929	—	4,253	—	1,626
7. Trunk cases	7,177	3,169	4,586	3,276	3,381	11,052	2,137
8. Lower extremities	—	3,211	3,185	3,601	4,845		2,078
9. All other cases	4,078	3,702	6,246	4,285	3,392	—	2,170
Panel E			**Proportional earnings losses**				
1. Workers age 20–59	.114	.167	.206	.353	.307	.580	.218
2. Workers age 20–29	.307	.193	.171	.431	.256		.231
3. Workers age 30–39	.109	.194	.103	.277	.293		.176
4. Workers age 40–49	−.036	.085	.309	.280	.300		.206
5. Workers age 50–59	.180	.198	.216	.582	.371	—	.262
6. Upper extremities	.116	.185	.241	—	.110	—	.173
7. Trunk cases	−.041	.188	.148	.355	.476	.580	.269
8. Lower extremities	—	.113	.159	.290	.489	—	.177
9. All other cases	.130	.178	.318	.374	.230	—	.239

Table 10.2 (continued)

Classification of workers	Percent rating						Mean ratings	Total
	1–2	3–5	6–10	11–15	16–50	51–100		
Panel F	Mean benefits net of legal fees (1968–73, in dollars)†							
1. Workers age 20–59	1,422	2,603	5,318	7,609	10,264	12,067		5,128
2. Workers age 20–29	1,070	2,427	5,352	8,027	11,904			4,792
3. Workers age 30–39	1,678	2,239	5,080	6,394	9,336			4,467
4. Workers age 40–49	1,439	2,754	5,816	8,520	9,878			5,537
5. Workers age 50–59	1,250	3,234	4,891	7,895	10,609			5,351
6. Upper extremities	1,113	2,230	4,771	—	11,555	—		3,857
7. Trunk cases	1,973	2,514	4,899	7,942	9,689	12,067		5,990
8. Lower extremities	—	3,341	7,275	7,097	11,920	—		5,881
9. All other cases	1,764	2,396	4,970	7,020	9,501	—		5,133
Panel G	Replacement rates: benefits as proportion of earnings losses							
1. Workers age 20–59	.33	.38	.64	.56	.80	.48		.58
2. Workers age 20–29	.11	.33	.86	.46	1.16			.56
3. Workers age 30–39	.35	.26	1.06	.55	.74			.57
4. Workers age 40–49	a	.79	.47	.87	.76			.67
5. Workers age 50–59	.24	.40	.57	.41	.71			.53
6. Upper extremities	.25	.28	.53	—	2.58	—		.56
7. Trunk cases	a	.33	.82	.64	.46	.48		.56
8. Lower extremities	—	.75	1.09	.60	.62	—		.82
9. All other cases	.35	.35	.35	.41	.99	—		.52

*Significant at the .05 level.

†1968 present value dollars discounted at 6 percent.

a. The replacement rate is not shown because the mean earnings loss estimate is negative.

b. Distribution of the four cases with 51–100 percent ratings among age categories is not possible because of confidentiality requirements.

the male contested sample experienced on average a 21.8 percent loss of potential earnings during the six-year period because of their work-related injuries (table 10.2, panel E).

The relationship between seriousness of injury and extent of earnings losses is emphasized by the results in line 1 of panel E, because the mean proportional earnings losses consistently increase as disability ratings increase. For the male uncontested cases (table 10.1), workers with a 1-2 percent rating experienced an earnings loss estimated to be 3.6 percent of potential earnings, whereas workers with 16-50 percent ratings experienced an average 18.9 percent loss of earnings. There is also a clear-cut monotonic relationship between average disability ratings and proportional earnings losses for the contested male sample (table 10.2). Losses in the 1-2 percent rating category average 11 percent of potential earnings, and increase to a maximum for the four cases with ratings in the 51-100 percent category, with average losses that are 58 percent of potential earnings. When the two samples are compared, it is evident that the wage losses are consistently larger in the contested cases. One demonstration of this fact is that for each disability rating category, the proportional earnings loss for the contested cases exceeds the loss for the uncontested cases. For example, for the rating category 6-10 percent, contested cases average a 20.6 percent earnings loss and uncontested cases a 9.9 percent earnings loss.

Panel F presents the mean benefits net of legal fees for the Wisconsin workers. For each worker in our sample, we determined the amount and the timing of all types of workers' compensation cash benefits received between 1968 and 1973. From these amounts, we subtracted attorneys' fees (which averaged about 2 percent of gross benefits for all Wisconsin cases, including contested and uncontested cases) to arrive at net benefits, and then calculated the present value of these benefits as of 1968. For the entire sample of uncontested cases, the average worker received $2,150 in benefits, which means the total net benefits received by the sample of 1,685 workers were $3.623 million. The mean benefits for the contested cases were $5,128 which means that the 285 workers in the sample received a total of $1.459 million in benefits. The grand total for both samples of male workers in Wisconsin was $5.082 million.

Panel G contains the replacement rates for the Wisconsin workers, which were calculated by dividing the mean benefits in panel F by the mean earnings losses in panel C. Overall, we estimate that benefits replaced 85 percent of earnings losses for the workers in the uncontested

sample and 58 percent of the earnings losses for the workers in the contested sample.

The Wage-Loss Study of Florida

The Florida Workers' Compensation Program[6]

In 1968, the year of injury for the workers in our sample, temporary total disability benefits were 60 percent of the worker's preinjury wage, subject to a maximum weekly benefit of $49. Permanent partial disability benefits were paid for up to 350 weeks depending on the severity of the injury, with the weekly amount the same as the temporary total disability benefits. Permanent total disability benefits were paid for the duration of the disability at weekly amounts equivalent to the temporary total disability amounts.

As of 1968, the duration of the Florida permanent partial disability benefits was determined by one of several approaches, depending on the nature of the injury. The statute included a schedule of certain injuries with a corresponding list of durations. The schedule provided a fixed number of weeks for amputation or total loss of use of such members as hands, fingers, and feet, and provided that partial loss or partial loss of use of each member was compensated proportionally relative to total loss of the member. For injuries that could not be rated on the basis of the schedule, the statute provided for permanent disability benefits based on "either physical impairment or diminution of wage earning capacity, whichever is greater." The "physical impairment" ratings were based on the degree of functional limitations or impairments compared to a whole man. "Diminution of wage earning capacity" was not defined by statute, and court cases used factors such as extent of impairment, age, education, and ability to compete in the open labor market as factors relevant to the determination of the extent of diminution of earning capacity. The disability rating determined in a nonscheduled case was multiplied by 3.5 weeks per percentage point to determine the duration of the permanent partial disability benefits. If the worker was determined to be permanently and totally disabled because of the extent of his impairment or functional limitation and factors such as age, education, and ability to compete in the open labor market, benefits were paid for the duration of the disability.

The extent of permanent disability was usually determined by litigation or by negotiations between lawyers representing the parties. These negotiations often culminated in compromise and release agreements

(known as washouts in Florida), which had to be approved by the industrial claims judges. However, these approvals were normally perfunctory, as evidenced by lack of information in many of the Bureau's case folders for washouts about how the judge assessed the extent of disability and the adequacy of the settlement.[7] The passive nature of the Florida workers' compensation agency was underlined by the unavailability to the judges of any procedure within the agency to evaluate the extent of permanent disability when this was a controverted issue.

Empirical Results for Florida

The methodology used for Florida was similar to that described for Wisconsin, consisting of drawing a sample from a tape record of 1968 injuries, collecting data on the sampled cases by examining Florida case folders, and then having the Social Security Administration process the data and prepare tabulations, which included the information in tables 10.3 and 10.4.[8] Male regular cases—those that paid benefits without litigation or use of a compromise and release agreement—are included in table 10.3 and constitute less than a third of all permanent partial disability cases. Male controverted cases are shown in table 10.4. The format of tables 10.3 and 10.4 is similar to that of tables 10.1 and 10.2, except that the percent rating intervals that define the columns differ between Florida and Wisconsin. (The lowest interval, for example, is 1-2 percent in Wisconsin and 1-5 percent in Florida.) Also, the Florida percent ratings were based not on the permanent disability ratings (as in Wisconsin) but on the lost time charges assigned to each case on the basis of the American National Standards Institute Z:16 lost time scale. This scale is an impairment rating scale that assigns to each permanent disability case a time charge of from 1 to 6,000 days (the latter for permanent total disability). Dividing each time charge by 60 yields a percent rating of from .02 to 100.[9]

Panel A presents the weighted counts for the workers in the sample. Table 10.3 indicates that the total sample of male regular cases was 1,665, with an average disability rating of 5.57 percent. The sample of those who received their benefits in controverted cases contains 3,937 workers, with an average disability rating of 15.29 percent (table 10.4).

In both samples, the disability rating is associated with age and with injury location. Disability ratings tend to increase with age, and of the four injury locations, the upper extremities have the lowest average ratings and the trunk the highest.

Table 10.3
Florida Regular Permanent Partial Disability Cases for Men with 1968 Injuries

Classification of workers	Percent rating						Mean ratings	Total
	1–2	3–5	6–10	11–15	16–50	51–100		
Panel A	Weighted counts of workers and mean disability ratings							
1. Workers age 20–59	1,141	343	107	46	28		5.57	1,665
2. Workers age 20–29	267	54	17	12	7		5.04	357
3. Workers age 30–39	304	83	37	7	6		5.17	437
4. Workers age 40–49	319	112	32	17	9		6.22	489
5. Workers age 50–59	251	94	21	10	6		5.70	382
6. Upper extremities	745	147	42	24	11		4.30	969
7. Trunk cases	91	83	36	14	0		9.25	224
8. Lower extremities	259	86	24	8	6		5.90	383
9. All other cases	46	27	5	0	11		8.73	89
Panel B	Mean potential earnings (1968–73, in dollars)†							
1. Workers age 20–59	36,560	37,957	38,038	38,577	38,048			37,023
2. Workers age 20–29	36,546	37,944	35,977	42,365	23,067			36,661
3. Workers age 30–39	39,150	42,659	40,102	33,785	46,622			39,914
4. Workers age 40–49	38,581	40,490	40,383	41,320	73,799			39,426
5. Workers age 50–59	30,869	30,796	32,494	32,720	30,224			30,979
6. Upper extremities	36,306	36,789	39,678	37,105	35,465			36,536
7. Trunk cases	40,383	36,848	39,384	42,155	—			39,024
8. Lower extremities	35,090	40,989	33,927	36,730	44,622			36,525
9. All other cases	41,380	38,070	34,292	—	37,044			39,442

Panel C	Mean earnings losses (1968–73, in dollars)†					
1. Workers age 20–59	154	−466	1,601	290	4,124*	190
2. Workers age 20–29	4,807*	1,351	4,714	−1,863	529	3,972*
3. Workers age 30–39	−912	−3,536	149	2,938	5,886*	−1,166
4. Workers age 40–49	−633	−877	940	−2,998	2,979	−602
5. Workers age 50–59	−2,506	1,693	2,645	6,609	8,276	−782
6. Upper extremities	1,167	−546	−104	−1,626	4,619	822
7. Trunk cases	−380	563	1,461	3,714	—	521
8. Lower extremities	−2,130	1,505	3,553	43	7,851	−756
9. All other cases	−2,339	−9,464	7,549*	—	1,597	−3,459
Panel D	**Standard deviation of mean earnings losses (1968–73, in dollars)†**					
1. Workers age 20–59	811	1,238	1,128	1,983	2,075	561
2. Workers age 20–29	1,548	2,453	4,269	2,901	3,581	1,137
3. Workers age 30–39	1,849	2,843	1,877	4,033	856	1,244
4. Workers age 40–49	1,305	2,240	1,690	3,351	3,922	934
5. Workers age 50–59	1,601	2,147	1,692	4,879	5,896	1,104
6. Upper extremities	1,134	2,050	1,543	2,156	3,323	924
7. Trunk cases	1,573	1,819	2,290	4,424	—	1,054
8. Lower extremities	1,474	1,806	2,229	4,932	6,080	1,144
9. All other cases	1,806	5,458	3,530	—	2,138	1,991
Panel E	**Proportional earnings losses**					
1. Workers age 20–59	.004	−.012	.042	.008	.108	.005
2. Workers age 20–29	.131	.036	.131	−.044	.023	.108
3. Workers age 30–39	−.023	−.083	.004	.087	.126	−.029
4. Workers age 40–49	−.016	−.022	.023	−.073	.061	−.016
5. Workers age 50–59	−.081	.055	.081	.202	.274	−.025
6. Upper extremities	.032	−.015	−.003	−.044	.130	.022
7. Trunk cases	−.009	.015	.037	.088	—	.013
8. Lower extremities	−.061	.037	.105	.001	.176	−.021
9. All other cases	−.057	−.249	.220	—	.043	−.088

Table 10.3 (continued)

Classification of workers	Percent rating							
	1–2	3–5	6–10	11–15	16–50	51–100	Mean ratings	Total
Panel F	Mean benefits net of legal fees (1968–73, in dollars)†							
1. Workers age 20–59	864	1,803	2,966	4,015	6,399			1,372
2. Workers age 20–29	750	1,666	2,756	3,700	6,447			1,195
3. Workers age 30–39	856	1,896	3,138	3,980	5,040			1,355
4. Workers age 40–49	982	1,821	2,826	4,132	6,999			1,515
5. Workers age 50–59	843	1,779	3,049	4,217	6,800			1,376
6. Upper extremities	755	1,606	2,345	3,732	5,725			1,083
7. Trunk cases	1,186	2,051	3,152	4,191	—			2,010
8. Lower extremities	1,061	1,897	3,753	4,552	6,307			1,572
9. All other cases	881	1,819	3,072	—	7,123			2,060
Panel G	Replacement rates: benefits as proportion of earnings losses							
1. Workers age 20–59	5.63	a	1.85	13.85	1.55			7.24
2. Workers age 20–29	.16	1.23	.58	a	12.18			.30
3. Workers age 30–39	a	a	21.11	1.35	.86			a
4. Workers age 40–49	a	a	3.00	a	2.35			a
5. Workers age 50–59	a	1.05	1.15	.64	.82			a
6. Upper extremities	.65	a	a	a	1.24			1.32
7. Trunk cases	a	3.65	2.16	1.13	—			3.86
8. Lower extremities	a	1.26	1.06	105.57	.80			a
9. All other cases	a	a	.41	—	4.46			a

*Significant at the .05 level.

†1968 present value dollars discounted at 6 percent.

a. The replacement rate is not shown because the mean earnings loss estimate is negative.

Comparison of the A panels in tables 10.3 and 10.4 reveals a strong association between size of the disability rating and probability of controversion. Only about half of the cases with 1-5 percent ratings are controverted (1,308 of 2,449), but over nine-tenths of the cases with 26-50 percent ratings are controverted (430 of 458). Also, controlling for severity, there is an association between injury location and controversion. For example, among cases with 1-5 percent disability ratings, about one-third of upper extremity cases were controverted (408 of 1,153) whereas over four-fifths of trunk cases were controverted (393 of 484).

Panel B shows the mean potential earnings between 1968 and 1973 for workers in our sample. As shown in table 10.3, the mean potential earnings for all of the males in the regular sample were $37,023 (measured in 1968 present value dollars discounted at 6 percent, as are all dollar figures in tables 10.3 and 10.4). This amount times the sample size (1,665) yields potential earnings of $61.643 million for the entire sample of regular cases. For the controverted sample (table 10.4), the mean potential earnings for 1968-73 were $32,735, and thus the aggregate potential earnings for the 3,937 workers in the sample were $128.879 million. The total expected or potential earnings for both samples were $190.522 million.

Panel C shows the mean earnings losses for the workers, and panel D shows the standard deviation of the earnings losses for all workers in each cell. Statistically significant earnings losses in panel C are asterisked. The mean earnings loss between 1968 and 1973 for the male regular cases (table 10.3) was $190, which was not statistically significant; for the male controverted cases (table 10.4) it was $6,898, which was statistically significant. We estimate actual 1968-73 earnings of the 5,602 workers in our two samples to have been $27.473 million less than they would have been if the workers had not been injured.

For the entire sample of male regular cases, the workers experienced an average 0.5 percent loss of potential earnings because of their injuries (table 10.3, panel E), a loss too small to be considered statistically meaningful. The male controverted sample, on the other hand, experienced on average a 21.1 percent loss of potential earnings during the six-year period (table 10.4, panel E).

A relationship between seriousness of injury and extent of earnings losses for the male controverted sample is shown by the consistent increase in proportional earnings losses as disability ratings increase in

Table 10.4
Florida Controverted Permanent Partial Disability Cases for Men with 1968 Injuries

Classification of workers	Percent rating									
	1–5	6–10	11–15	16–25	26–50	51–70	71–99	100	Mean ratings	Total
Panel A	Weighted counts of workers and mean disability ratings									
1. Workers age 20–59	1,308	951	610	492	430	50	31	65	15.29	3,937
2. Workers age 20–29	321	237	124	78	75	5	6	6	12.40	852
3. Workers age 30–39	376	281	164	156	117	16	7	18	15.12	1,135
4. Workers age 40–49	412	242	193	160	148	10	8	24	16.17	1,197
5. Workers age 50–59	199	191	129	98	90	19	10	17	17.44	753
6. Upper extremities	408	194	125	85	52	9	0	5	10.30	878
7. Trunk cases	393	363	287	248	187	27	13	35	17.92	1,553
8. Lower extremities	268	197	104	88	57	8	9	12	14.08	743
9. All other cases	239	197	94	71	134	6	9	13	16.66	763
Panel B	Mean potential earnings (1968–73, in dollars)†									
1. Workers age 20–59	31,188	32,782	33,117	34,597	34,829	31,142	31,795	33,325		32,735
2. Workers age 20–29	31,045	34,292	33,761	31,200	33,923	35,362	36,535	29,390		32,664
3. Workers age 30–39	34,153	34,966	36,772	39,881	39,808	34,733	31,598	39,321		36,177
4. Workers age 40–49	30,226	34,102	33,170	34,841	35,212	29,848	33,064	33,079		32,815
5. Workers age 50–59	27,808	26,024	27,555	28,493	28,482	27,688	28,076	28,710		27,503
6. Upper extremities	30,335	31,584	34,213	33,264	32,091	28,962	—	43,798		31,613
7. Trunk cases	31,729	31,506	31,576	34,099	34,807	28,982	35,791	33,866		32,432
8. Lower extremities	32,611	35,002	33,981	36,286	35,770	36,773	30,983	25,923		34,031
9. All other cases	30,161	34,095	35,411	35,843	35,523	36,622	26,836	34,671		33,382

Panel C	Mean earnings losses (1968–73, in dollars)†								
1. Workers age 20–59	4,094*	4,614*	7,287*	8,903*	12,607*	18,054*	21,313*	24,687*	6,898*
2. Workers age 20–29	6,296*	6,594*	6,759*	8,400*	9,309*	13,898*	23,922*	22,524*	7,187*
3. Workers age 30–39	2,533	5,317*	8,408*	10,127*	18,065*	18,662*	23,734*	29,388*	7,500*
4. Workers age 40–49	5,517*	2,609	8,255*	6,978*	13,518*	22,178*	25,883*	26,640*	7,254*
5. Workers age 50–59	547	3,661*	4,920*	10,496*	6,761*	16,466*	14,398*	17,715*	5,097*
6. Upper extremities	3,911*	914	3,678	7,464*	5,686*	11,392*	—	17,649*	3,820*
7. Trunk cases	4,013*	3,215	8,662*	10,381*	17,437*	20,462*	23,505*	26,043*	8,265*
8. Lower extremities	3,808	10,203*	7,385*	7,575*	8,040*	17,543*	23,875*	20,895*	7,442*
9. All other cases	4,862*	5,245*	7,778*	7,106*	10,494*	17,895*	15,585*	27,242*	7,129*
Panel D	**Standard deviation of mean earnings losses (1968–73, in dollars)†**								
1. Workers age 20–59	953	1,022	1,137	177	1,129	1,604	2,255	1,458	501
2. Workers age 20–29	2,062	1,912	2,854	2,199	2,648	5,555	3,746	3,487	1,093
3. Workers age 30–39	2,013	2,275	1,932	1,844	3,027	2,977	4,119	2,253	1,068
4. Workers age 40–49	1,599	2,219	2,043	2,657	1,929	3,243	5,246	2,146	975
5. Workers age 50–59	1,877	1,521	1,864	2,158	321	2,370	3,260	3,169	826
6. Upper extremities	1,901	2,575	1,947	2,296	2,460	3,986	—	8,659	1,106
7. Trunk cases	1,811	1,959	1,742	1,766	2,041	1,935	4,037	1,813	854
8. Lower extremities	1,950	1,609	2,170	2,193	2,485	4,668	3,358	3,195	848
9. All other cases	1,886	1,765	2,977	2,593	2,496	3,573	3,149	2,483	1,015
Panel E	**Proportional earnings losses**								
1. Workers age 20–59	.131	.141	.220	.257	.362	.580	.670	.741	.211
2. Workers age 20–29	.203	.192	.200	.269	.274	.393	.655	.766	.220
3. Workers age 30–39	.074	.152	.229	.254	.454	.537	.751	.747	.207
4. Workers age 40–49	.182	.077	.248	.200	.384	.743	.783	.805	.221
5. Workers age 50–59	.020	.141	.179	.368	.237	.595	.513	.617	.185
6. Upper extremities	.129	.029	.107	.224	.177	.393	—	.403	.121
7. Trunk cases	.126	.102	.274	.304	.501	.706	.657	.769	.255
8. Lower extremities	.117	.292	.217	.209	.225	.477	.771	.806	.219
9. All other cases	.161	.154	.220	.198	.295	.489	.581	.786	.214

Table 10.4 (continued)

Classification of workers	Percent rating								Mean ratings	Total
	1–5	6–10	11–15	16–25	26–50	51–70	71–99	100		
Panel F	Mean benefits net of legal fees (1968–73, in dollars)†									
1. Workers age 20–59	1,106	2,318	3,067	5,340	8,269	11,612	14,331	18,203		3,534
2. Workers age 20–29	1,016	1,963	2,863	4,903	7,778	10,410	17,012	29,643		2,869
3. Workers age 30–39	1,077	2,229	2,894	5,167	8,438	12,274	12,854	19,454		3,468
4. Workers age 40–49	1,156	2,887	3,266	5,523	8,608	12,841	15,299	17,946		3,880
5. Workers age 50–59	1,203	2,169	3,187	5,667	7,903	10,725	12,982	13,202		3,837
6. Upper extremities	966	1,931	2,811	4,724	6,563	9,142	—	16,144		2,280
7. Trunk cases	1,221	2,306	3,015	5,300	8,558	12,569	14,502	16,842		4,001
8. Lower extremities	1,073	2,984	3,428	5,347	8,132	11,520	12,199	20,597		3,520
9. All other cases	1,295	2,055	3,171	6,212	8,588	11,135	16,216	20,448		4,040
Panel G	Replacement rates: benefits as proportion of earnings losses									
1. Workers age 20–59	.27	.50	.42	.60	.66	.64	.67	.74		.51
2. Workers age 20–29	.16	.30	.42	.58	.84	.75	.71	1.32		.40
3. Workers age 30–39	.43	.42	.34	.51	.47	.66	.54	.66		.46
4. Workers age 40–49	.21	1.11	.40	.79	.64	.58	.59	.67		.53
5. Workers age 50–59	2.20	.59	.65	.54	1.17	.65	.90	.75		.75
6. Upper extremities	.23	2.11	.76	.63	1.15	.80	—	.91		.60
7. Trunk cases	.30	.72	.35	.51	.49	.61	.62	.65		.48
8. Lower extremities	.28	.29	.46	.71	1.01	.66	.51	.99		.47
9. All other cases	.27	.39	.41	.87	.82	.62	1.04	.75		.57

*Mean earnings losses differ significantly from zero at the .05 level.

†1968 present value dollars discounted at 6 percent.

table 10.4, panel E, line 1. Also, for the male regular cases, the only proportional earnings loss associated with a statistically significant mean earnings loss is for the most serious disability rating category: workers with 26-50 percent disability ratings experienced a 10.8 percent loss of potential earnings during 1968-73 (table 10.3, panel E, line 1).

Panel F presents the mean benefits net of legal fees for the Florida workers. Attorneys' fees represented about 13 percent of gross benefits for workers in our sample. For the entire sample of regular cases, the average worker received $1,372 in benefits between 1968 and 1973 (panel F of table 10.3); total net benefits received by the sample were $2.284 million. The mean benefits for the controverted cases were $3,534 (table 10.4, panel F), and total benefits for the sample were $13.913 million. The grand total for both samples of Florida male workers was $16.197 million in benefits.

Panel G contains the replacement rates. For all the workers in the male regular sample, the replacement rate is 7.24 ($1,372 ÷ $190). That is, we estimate benefits were 724 percent of earnings losses for the workers in the male regular sample. For all the workers in the controverted sample, benefits are estimated to have replaced 51 percent of the earnings losses (table 10.4).

The Wage-Loss Study of California

The California Workers' Compensation Program[10]

In 1968, the temporary total disability benefits were 65 percent of the worker's average weekly earnings (which were defined as 95 percent of actual earnings), subject to a maximum weekly benefit of $70.00 and a minimum weekly benefit of $25.00. Permanent partial disability benefits were paid for up to 400 weeks depending on the severity of the injury at a rate of four weeks for each percent of permanent disability, and the weekly benefit was 65 percent of the worker's average weekly earnings, subject to a maximum weekly benefit of $52.50 and a minimum weekly benefit of $20.00. Workers with permanent disability ratings of 70 percent or above also received life pension benefits, which began when their permanent partial disability benefits terminated. The weekly pension amount was 1.5 percent of average weekly earnings for each percent of disability rating above 60 percent. In 1968, the maximum average weekly earnings considered in calculating the life pension were $80.77.

The permanent disability ratings in California are determined by a unique approach that is described in chapter 7. One distinctive feature of the California statute is that rather than containing a schedule of certain injuries with a corresponding list of durations, it authorizes the administrative director of the Division of Industrial Accidents to issue a comprehensive schedule to be used to rate all permanent disabilities, and the schedule is to take account of the nature of the injury, the worker's occupation and age, and his diminished ability to compete in an open labor market. The schedule that has been issued pursuant to this statutory provision provides guidance for rating most injuries and diseases on the basis of the resulting impairment or functional limitations or work disability (loss of wage-earning capacity) or a combination of these consequences.

The method of determining the permanent disability ratings in California is also unique. Within the state workers' compensation agency is the Disability Evaluation Bureau (formerly the Permanent Disability Rating Bureau), which applies the rating schedule in many of the cases involving permanent disability benefits. There are five main types of rating procedures used by the Bureau, of which two are of particular relevance here because they help define our samples of California workers. *Informal ratings* (formerly designated advisory ratings) are made in voluntary cases, that is, cases in which no application for adjudication has been filed with the workers' compensation agency. The Bureau prepares the informal rating at the request of the employee and employer (or carrier), normally on the basis of medical reports submitted with the rating request. If the rating is acceptable to both parties, compensation is paid to the employee without further notification to the agency. The parties are not required to obtain informal ratings, are not bound by the ratings, and typically either do not bother to use the procedure or do not accept the ratings they obtain. *Formal ratings* are prepared by the Bureau at the request of a workers' compensation judge during the course of a litigated case. The rating is based on a description of the disability prepared by the judge, and the Bureau does not have access to the medical reports or other information in the case file as a basis for the rating. The judge will consider objections to the rating from the parties and the rating may be modified during the litigation process, but normally the rating serves as a basis for the decision (known as a findings and award).

Most California permanent disability cases pay benefits without informal or formal ratings being prepared by the Disability Evaluation

Bureau. We term these cases "Other WCAB" cases because a Workers' Compensation Appeals Board judge is involved. The judge may issue a findings and award without using the Bureau (a relatively unusual procedure) or, quite commonly, approve a compromise and release agreement or a stipulated findings and award (in these procedures, the judge can approve an agreement reached by the parties without conducting a regular hearing). Some of the Other WCAB cases in our sample contain ratings made by the Bureau other than informal or formal ratings, but the typical Other WCAB case involves a compromise and release or stipulated findings and award that the workers' compensation judge has approved without considering a rating from the Disability Evaluation Bureau.

Empirical Results for California

The methodology used for California was similar to that described for Wisconsin, consisting of drawing a sample of 1968 injuries, collecting data on the sampled cases by examining case folders, and then having the Social Security Administration process the data and prepare tabulations, which include the information in tables 10.5-10.7.[11] The main difference in the California methodology is that tape records of 1968 injuries were available only for those workers with informal ratings or formal ratings, and approximately 40,000 case folders were physically inspected in order to draw the Other WCAB sample.

Male informal cases—those in which an informal rating was received from the Disability Evaluation Bureau and benefits were paid on the basis of the informal rating—are included in table 10.5, and constitute about 10 percent of the male cases in our sample.[12] Male formal cases—those in which formal ratings were received from the Bureau—are included in table 10.6 and constitute about 20 percent of our male cases.[13] The Other WCAB cases, in which permanent disability benefits were received but neither informal nor formal ratings played a part, are included in table 10.7 and constitute about 70 percent of our male cases.

The format of tables 10.5-10.7 is similar to that of tables 10.1-10.4, except that the percent rating intervals that define the columns differ among the states. (For example, California has an 11-25 percent disability rating interval, whereas Florida has both an 11-15 percent interval and a 16-25 percent interval.) The percent disability rating used to classify each California case was constructed by using the dollar amount of the permanent disability award as a proxy for the disability rating. The award was divided by four times the weekly rate for permanent

Table 10.5
California Informal Permanent Partial Disability Cases for Men with 1968 Injuries

Classification of workers	Percent rating						Mean ratings	Total
	1–5	6–10	11–25	26–50	51–69	70+		
Panel A	Weighted counts of workers and mean disability ratings							
1. Workers age 20–59	885	302	248	59			7.21	1,584
2. Workers age 20–29	223	86	32	0			3.78	341
3. Workers age 30–39	252	68	57	9			6.41	386
4. Workers age 40–49	244	120	75	24			7.82	463
5. Workers age 50–59	166	118	84	26			9.39	394
6. Upper extremities	775	270	139	20			5.87	1,201
7. Back	0	17	47	28			20.43	92
8. Lower extremities	93	93	37	5			7.90	242
9. All other cases	16	12	15	6			11.92	49
Panel B	Mean potential earnings (1968–73, in dollars)[1]							
1. Workers age 20–59	45,221	46,375	44,025	48,351				45,436
2. Workers age 20–29	36,680	36,291	(40,598)					36,949
3. Workers age 30–39	50,550	51,673	48,549	48,583				50,602
4. Workers age 40–49	49,613	54,476	47,195	51,409				50,497
5. Workers age 50–59	41,695	42,736	39,435	45,354				41,773
6. Upper extremities	45,441	44,331	42,313	45,886				44,837
7. Back	—	51,777	46,569	48,136				48,008
8. Lower extremities	43,947	51,637	44,349	54,640				47,201
9. All other cases	42,321	43,912	50,898	52,356				46,565

Panel C			**Mean earnings losses (1968–73, in dollars)†**		
1. Workers age 20–59	−2,272	−1,287	−93	2,762	−1,500
2. Workers age 20–29	2,193	−1,941	24	—	943
3. Workers age 30–39	2,065	1,106	2,898	12,066*	−444
4. Workers age 40–49	−2,613	−3,741	−2,866	2,808	−2,665
5. Workers age 50–59	−8,085*	309	308	−502	−3,281
6. Upper extremities	−2,496	−961	1,871	5,199	−1,950
7. Back	—	−1,497	3,344	3,213	2,409
8. Lower extremities	−846	−2,367	3,278	−755	−631
9. All other cases	−114	83	−4,954	−4,539	−2,089
Panel D			**Standard deviation of mean earnings losses (1968–73, in dollars)†**		
1. Workers age 20–59	2,194	1,871	1,273	2,024	1,293
2. Workers age 20–29	5,539	1,797	3,225	—	3,364
3. Workers age 30–39	4,771	4,333	2,249	5,321	3,204
4. Workers age 40–49	2,961	3,767	1,916	2,822	2,074
5. Workers age 50–59	2,527	3,793	2,169	3,059	1,856
6. Upper extremities	2,487	3,300	1,726	3,398	1,698
7. Back	—	2,508	2,411	2,998	1,613
8. Lower extremities	2,164	2,630	2,176	5,495	1,424
9. All other cases	3,222	1,521	3,212	6,093	2,062
Panel E			**Proportional earnings losses**		
1. Workers age 20–59	.050	.028	−.002	.057	−.033
2. Workers age 20–29	.060	.054	.001	—	.026
3. Workers age 30–39	.041	.021	.060	.248	−.009
4. Workers age 40–49	−.053	−.069	−.061	.055	−.053
5. Workers age 50–59	−.194	.007	.008	−.011	−.079
6. Upper extremities	−.055	.022	.044	.113	−.044
7. Back	—	−.029	.072	.067	.050
8. Lower extremities	−.019	−.046	.074	−.014	−.013
9. All other cases	−.027	.002	−.097	−.087	−.045

Table 10.5 (continued)

Classification of workers	Percent rating						Mean ratings	Total
	1–5	6–10	11–25	26–50	51–69	70+		
Panel F	Mean benefits net of legal fees (1968–73, in dollars)†							
1. Workers age 20–59	856	2,312	4,358	8,016				2,032
2. Workers age 20–29	659	2,326	4,690	—				1,459
3. Workers age 30–39	865	2,297	4,327	8,104				1,797
4. Workers age 40–49	757	2,326	4,222	8,431				2,123
5. Workers age 50–59	1,253	2,297	4,374	7,603				2,650
6. Upper extremities	805	2,118	4,093	8,020				1,601
7. Back	—	2,633	4,928	8,050				5,454
8. Lower extremities	1,280	2,825	4,593	8,586				2,669
9. All other cases	756	2,233	4,294	7,573				3,011
Panel G	Replacement rates: benefits as proportion of earnings losses							
1. Workers age 20–59	a	a	a	2.9				a
2. Workers age 20–29	.30	a	191.66	.00				1.55
3. Workers age 30–39	a	2.08	1.49	.67				a
4. Workers age 40–49	a	a	a	3.00				a
5. Workers age 50–59	a	7.42	14.22	a				a
6. Upper extremities	a	a	a	1.54				a
7. Back	—	a	1.47	2.51				2.26
8. Lower extremities	a	a	1.40	a				a
9. All other cases	a	26.99	a	a				a

*Mean earnings losses differ significantly from zero at the .05 level.

†1968 present value dollars discounted at 6 percent.

a. The replacement rate is not shown because the mean earnings loss estimate is negative.

disability benefits to determine a disability rating. This procedure was necessary because for half of the Other WCAB sample, no disability rating of any kind was available in the case folder. This estimating procedure produces ratings identical to the informal ratings and formal ratings when the ratings were used to determine the amount of permanent disability benefits. For other cases, such as compromise and release cases, the procedure produces an approximation of the implicit disability rating that allows comparisons to be made among all types of California cases.[14]

Panel A presents the weighted counts for the workers in each sample. Table 10.5 indicates that the total sample of male informal cases was 1,584 workers, who had an average disability rating of 7.21 percent. Table 10.6 shows that the 3,213 male cases with formal ratings had average disability ratings of 22.08 percent, and table 10.7 reveals that the average disability rating was 12.51 percent for the 11,182 cases in the sample of Other WCAB cases.

In all three samples, the size of the disability ratings is associated with age and injury location. With only one minor exception, mean disability ratings increase with age. Among the four injury locations, upper extremity injuries have the lowest average rating and back injuries the highest average rating in each sample. Comparison of the A panels of tables 10.5-10.7 reveals an association between the size of the rating and the method of resolving the case. Most cases in all ratings categories were resolved without the use of formal or informal ratings and thus fall in the Other WCAB sample. Informal ratings account for 14 percent of the cases with ratings of 5 percent or less, and decline in importance for more serious cases. In contrast, formal ratings account for less than one in ten of the cases with ratings of 5 percent or less, but increase in importance for more serious cases and represent more than four out of ten of the cases with ratings of 51 percent or more. Also, controlling for severity, there is an association between injury location and the method of resolving the case. For example, among cases with 6-10 percent disability ratings, about 15 percent of the upper extremity cases were in the informal sample (270 of 1,641), but only about 2 percent of the back cases were in the informal sample (17 of 985).

As shown in table 10.5, panel B, the mean potential earnings for all of the workers in the male informal sample were $45,436 (measured in 1968 present value dollars discounted at 6 percent, as are all dollar

Table 10.6
California Formal Permanent Partial Disability Cases for Men with 1968 Injuries

Classification of workers	Percent rating							
	1–5	6–10	11–25	26–50	51–69	70+	Mean ratings	Total
Panel A	Weighted counts of workers and mean disability ratings							
1. Workers age 20–59	574	660	994	736	129	119	22.08	3,213
2. Workers age 20–29	196	201	238	138	8	8	15.89	789
3. Workers age 30–39	218	186	340	218	36	18	19.86	1,016
4. Workers age 40–49	102	110	250	234	47	49	26.94	842
5. Workers age 50–59	58	113	166	146	38	44	27.43	566
6. Upper extremities	212	185	178	72	5	10	13.30	663
7. Back	124	282	518	530	82	73	27.25	1,609
8. Lower extremities	129	144	226	84	30	19	18.83	632
9. All other cases	109	49	72	50	12	17	20.59	309
Panel B	Mean potential earnings (1968–73, in dollars)†							
1. Workers age 20–59	39,478	37,711	39,402	43,337	39,877	43,767		40,144
2. Workers age 20–29	34,205	32,596	39,020	37,447	30,905	46,226		35,903
3. Workers age 30–39	42,724	45,270	42,215	50,672	48,332	58,893		45,210
4. Workers age 40–49	44,055	39,880	39,060	43,236	38,769	45,288		41,251
5. Workers age 50–59	37,805	31,300	34,702	38,111	35,190	35,439		35,280
6. Upper extremities	40,706	38,060	40,686	37,937	24,725	45,937		39,559
7. Back	33,979	36,927	38,476	45,548	39,590	45,017		40,201
8. Lower extremities	42,004	39,207	39,410	44,388	42,064	37,997		40,671
9. All other cases	40,357	36,517	42,868	36,833	42,598	43,573		40,026

Panel C			**Mean earnings losses (1968–73, in dollars)†**				
1. Workers age 20–59	3,341*	6,156*	8,717*	17,520*	20,791*	32,958*	10,633*
2. Workers age 20–29	3,149	3,370	12,667*	6,933*	19,451*	35,927*	7,232*
3. Workers age 30–39	2,259	11,621*	10,218*	26,322*	32,972*	41,353*	13,580*
4. Workers age 40–49	6,568	5,464	5,153*	19,373*	10,526*	34,423*	11,343*
5. Workers age 50–59	2,417	3,086	5,367*	11,424*	22,210*	27,352*	9,024*
6. Upper extremities	47	7,791*	6,428*	9,808*	2,577	26,490*	5,411*
7. Back	3,005	6,690*	11,277*	19,584*	19,879*	35,841*	14,125*
8. Lower extremities	4,064	3,327	4,737*	12,657*	22,612*	26,594*	6,851*
9. All other cases	9,274*	5,224	8,431*	14,997*	29,980*	31,497*	11,388*
Panel D			**Standard deviation of mean earnings losses (1968–73, in dollars)†**				
1. Workers age 20–59	1,700	1,403	1,260	2,235	2,292	1,612	825
2. Workers age 20–29	2,576	2,235	2,276	2,654	6,414	5,234	1,293
3. Workers age 30–39	3,044	2,967	2,550	5,967	2,916	4,260	1,893
4. Workers age 40–49	4,270	3,076	2,516	3,293	4,207	2,275	1,618
5. Workers age 50–59	3,406	2,070	1,941	3,363	3,695	2,472	1,324
6. Upper extremities	3,345	2,531	2,139	2,474	4,753	5,678	1,488
7. Back	3,216	1,796	1,838	3,095	3,344	2,108	1,375
8. Lower extremities	3,365	3,368	1,946	2,475	3,277	2,535	1,378
9. All other cases	2,539	2,854	2,870	2,558	4,227	4,284	1,479
Panel E			**Proportional earnings losses**				
1. Workers age 20–59	.085	.163	.221	.405	.521	.753	.265
2. Workers age 20–29	.092	.103	.324	.186	.629	.777	.201
3. Workers age 30–39	.053	.257	.242	.519	.682	.702	.300
4. Workers age 40–49	.150	.137	.132	.449	.272	.760	.275
5. Workers age 50–59	.065	.098	.155	.299	.631	.772	.256
6. Upper extremities	.001	.205	.158	.260	.104	.577	.137
7. Back	.088	.181	.293	.440	.502	.796	.351
8. Lower extremities	.097	.085	.120	.285	.538	.700	.168
9. All other cases	.230	.143	.197	.407	.704	.723	.285

Table 10.6 (continued)

Classification of workers	Percent rating						Mean ratings	Total
	1–5	6–10	11–25	26–50	51–69	70 +		
Panel F	Mean benefits net of legal fees (1968–73, in dollars)†							
1. Workers age 20–59	1,155	2,194	4,311	8,148	11,553	16,482		4,934
2. Workers age 20–29	1,245	1,940	4,568	7,266	11,206	21,943		3,790
3. Workers age 30–39	1,085	2,772	4,247	8,304	10,925	16,373		4,621
4. Workers age 40–49	1,111	2,137	4,261	8,857	11,000	16,409		5,839
5. Workers age 50–59	1,189	1,771	4,148	7,610	12,888	15,614		5,747
6. Upper extremities	967	2,106	3,890	8,184	9,684	15,692		3,149
7. Back	1,464	2,027	4,438	8,023	11,497	16,418		5,871
8. Lower extremities	1,354	2,689	4,481	8,810	11,844	16,682		4,728
9. All other cases	958	2,029	3,903	8,299	11,975	16,996		4,312
Panel G	Replacement rates: benefits as proportion of earnings losses							
1. Workers age 20–59	.35	.36	.49	.47	.56	.50		.46
2. Workers age 20–29	.40	.58	.36	1.05	.58	.61		.52
3. Workers age 30–39	.48	.24	.42	.32	.33	.40		.34
4. Workers age 40–49	.17	.39	.83	.46	1.05	.48		.51
5. Workers age 50–59	.49	.57	.77	.67	.58	.57		.64
6. Upper extremities	20.47	.27	.61	.83	3.76	.59		.58
7. Back	.49	.30	.39	.41	.58	.46		.42
8. Lower extremities	.33	.81	.95	.70	.52	.63		.69
9. All other cases	.10	.39	.46	.55	.40	.54		.38

*Mean earnings losses differ significantly from zero at the .05 level.

†1968 present value dollars discounted at 6 percent.

figures in tables 10.5-10.7). This amount times the sample size (1,584) yields potential earnings of $71.971 million for the entire male informal sample. For the male formal sample (table 10.6), the mean potential earnings were $40,144 and the aggregate potential earnings were $128.983 million. For the Other WCAB sample (table 10.7), the mean potential earnings were $38,683 and the aggregate potential earnings $432.551 million. The total expected or potential earnings for all three samples were thus $633.505 million.

The meaning of the -$1,500 earnings loss figure for the male informal cases (table 10.5) is that actual earnings exceeded our estimate of potential earnings by $1,500 per worker, a result that was not statistically significant (table 10.5, panels C and D). For the male informal sample of 1,584 workers, actual earnings exceeded our estimates of potential earnings by $2.376 million. For the male formal cases (table 10.6), the mean loss was $10,633 and statistically significant, and the aggregate earnings loss $34.163 million. For the Other WCAB cases (table 10.7), the mean loss was $7,166 and statistically significant, and the aggregate earnings loss was $80.138 million. We estimate that actual earnings of the 15,979 California workers in our three male samples between 1968 and 1973 were $111.925 million less than they would have been if the workers had not been injured.

Panel E provides estimates of proportional earnings losses, which are the mean earnings losses from panel C divided by the mean potential earnings from panel B. For the entire sample of male informal cases, the workers experienced an average 3.3 percent negative earnings loss, which was not statistically significant. Essentially, we found that workers in our sample of male informal cases experienced no earnings losses because of their injuries. Workers in the male formal cases (table 10.6, panel G), however, experienced on average a 26.5 percent loss of potential earnings during 1968-73 because of their injuries, and the male Other WCAB cases had an average loss of 18.5 percent (table 10.7, panel G). A relationship between seriousness of injury and extent of earnings losses for all three samples is shown by the consistent increases in proportional earnings losses as disability increases in panel E, line 1 of tables 10.5-10.7. Of the three samples, it is evident that earnings losses are lowest in the informal sample. When severity of injury is controlled for, neither of the other two samples consistently shows greater earnings losses than the other.

Table 10.7
California "Other WCAB" Permanent Partial Disability Cases for Men with 1968 Injuries

Classification of workers	Percent rating					Mean ratings	Total
	1–5	6–10	11–25	26–50	51+		
Panel A	Weighted counts of workers and mean disability ratings						
1. Workers age 20–59	4,681	2,620	2,282	1,280	320	12.51	11,182
2. Workers age 20–29	1,634	914	469	329	61	10.09	3,407
3. Workers age 30–39	1,577	650	693	310	90	12.25	3,330
4. Workers age 40–49	735	751	500	395	115	15.41	2,496
5. Workers age 50–59	735	305	620	236	54	13.47	1,949
6. Upper extremities	2,316	1,186	594	236	42	8.29	4,374
7. Back	730	686	986	707	155	18.20	3,264
8. Lower extremities	671	428	484	178	52	12.74	1,813
9. All other cases	964	320	217	159	71	12.52	1,731
Panel B	Mean potential earnings (1968–73, in dollars)[7]						
1. Workers age 20–59	39,302	38,958	37,838	36,933	40,395		38,683
2. Workers age 20–29	34,919	34,944	35,451	34,275	44,102		35,070
3. Workers age 30–39	45,152	39,801	43,685	44,744	41,088		43,653
4. Workers age 40–49	41,029	42,402	38,209	36,839	41,337		40,163
5. Workers age 50–59	34,716	40,706	32,809	30,270	33,048		34,472
6. Upper extremities	40,151	38,748	35,980	32,959	46,401		38,911
7. Back	41,356	34,762	37,314	37,402	40,176		37,883
8. Lower extremities	41,459	45,629	38,796	39,884	31,560		41,294
9. All other cases	34,166	39,821	43,339	37,440	43,792		37,057

Panel C			**Mean earnings losses (1968–73, in dollars)†**			
1. Workers age 20–59	4,373*	5,358*	9,719*	12,024*	25,214*	7,166*
2. Workers age 20–29	4,386*	4,766	7,276*	7,221*	24,934*	5,527*
3. Workers age 30–39	5,564*	8,311*	12,098*	16,134*	33,342*	9,227*
4. Workers age 40–49	1,551	2,030	7,236*	11,254*	28,416*	5,607*
5. Workers age 50–59	4,610*	9,031*	10,911*	14,438*	5,163	8,508*
6. Upper extremities	3,437*	4,300*	6,146*	7,755*	12,966	4,363*
7. Back	11,321*	9,950*	12,358*	14,229*	31,094*	12,872*
8. Lower extremities	2,451	2,542	6,956*	12,269*	18,185*	5,090*
9. All other cases	2,698	3,208	13,674*	8,266	26,733*	5,666*
Panel D			**Standard deviation of mean earnings losses (1968–73, in dollars)†**			
1. Workers age 20–59	1,049	1,391	1,102	1,425	3,827	650
2. Workers age 20–29	1,683	2,444	2,382	3,147	7,896	1,173
3. Workers age 30–39	2,066	2,532	1,984	2,594	6,688	1,255
4. Workers age 40–49	2,404	2,517	2,310	2,411	3,829	1,308
5. Workers age 50–59	2,197	4,240	2,196	3,123	11,818	1,441
6. Upper extremities	1,340	1,917	2,110	2,616	21,171	979
7. Back	2,882	2,800	1,605	1,939	3,662	1,123
8. Lower extremities	2,698	3,532	2,278	3,718	4,531	1,521
9. All other cases	2,553	3,602	4,310	4,547	6,543	1,853
Panel E			**Proportional earnings losses**			
1. Workers age 20–59	.111	.138	.257	.325	.624	.185
2. Workers age 20–29	.126	.136	.205	.211	.565	.157
3. Workers age 30–39	.123	.209	.277	.361	.811	.211
4. Workers age 40–49	.038	.048	.189	.306	.687	.139
5. Workers age 50–59	.133	.222	.332	.477	.156	.247
6. Upper extremities	.086	.111	.171	.235	.279	.112
7. Back	.274	.286	.331	.380	.752	.340
8. Lower extremities	.059	.056	.179	.308	.576	.123
9. All other cases	.079	.081	.316	.221	.610	.153

Table 10.7 (continued)

Classification of workers	Percent rating					Mean ratings	Total
	1–5	6–10	11–25	26–50	51+		
Panel F	Mean benefits net of legal fees (1968–73, in dollars)†						
1. Workers age 20–59	802	1,951	3,886	7,864	14,664		2,905
2. Workers age 20–29	733	1,990	3,863	7,318	13,780		2,370
3. Workers age 30–39	773	2,054	4,120	7,637	14,112		2,739
4. Workers age 40–49	804	1,770	3,979	8,406	15,428		3,607
5. Workers age 50–59	1,019	2,065	3,565	8,030	14,957		3,225
6. Upper extremities	831	1,976	3,984	6,966	12,988		2,014
7. Back	892	1,944	3,871	8,208	15,695		4,301
8. Lower extremities	896	2,057	3,748	8,065	13,661		3,001
9. All other cases	599	1,734	4,043	7,442	14,140		2,425
Panel G	Replacement rates: benefits as proportion of earnings losses						
1. Workers age 20–59	18	36	40	65	58		41
2. Workers age 20–29	17	42	53	1.01	55		43
3. Workers age 30–39	14	25	34	47	42		30
4. Workers age 40–49	52	87	55	75	54		64
5. Workers age 50–59	22	23	33	56	2.90		38
6. Upper extremities	24	46	64	90	1.00		46
7. Back	08	20	31	58	52		33
8. Lower extremities	37	81	54	66	75		59
9. All other cases	22	54	30	90	53		43

*Mean earnings losses differ significantly from zero at the .05 level.

†1968 present value dollars discounted at 6 percent.

Panel F presents the mean benefits net of legal fees for the California workers.[15] Attorneys' fees represented about 6 percent of gross benefits for workers in our sample. For the sample of male informal cases, the average worker received $2,032 in benefits between 1968 and 1973 (panel F of table 10.5) and the total net benefits received by the sample were $3.219 million. The mean benefits for the male formal cases were $4,934 (table 10.6, panel F), and aggregate benefits for the sample were $15.853 million. For the Other WCAB cases, the mean benefits were $2,905 (table 10.7, panel F) and aggregate benefits $32.484 million. The grand total for all three samples of California male workers was $51.556 million.

Panel G contains the replacement rates. The replacement rate could not be calculated for workers in the male informal sample, since we estimate a negative earnings loss for that sample. Overall, we estimate that benefits replaced 46 percent of earnings losses for workers in the male formal sample and 41 percent of the earnings losses for workers in the male Other WCAB sample.

Comparisons of the Three States[16]

The panel A data show several similar patterns across the three states. The mean disability rating for the contested case sample is higher than the mean rating for the uncontested sample in each state. (Among the contested samples we include the Florida controverted cases and the California formal and Other WCAB cases; among the uncontested cases we include the Florida regular cases and the California informal cases.) A related finding is that the proportion of cases contested increases with increases in the disability ratings, a phenomenon demonstrated by comparing the number of cases in line 1 for the uncontested and contested cases in each state. Another common pattern is that disability ratings tend to increase with age; this relationship is particularly evident in Florida and California. The data by part of body injured (lines 5-9) also show some consistency across states. Trunk cases (including for this discussion the California back cases) and all other cases are the types most likely to be litigated, and upper extremity cases the least likely. Among contested cases, trunk injuries always have the highest mean rating, and among uncontested cases, upper extremity injuries always have the lowest mean rating.

The panel A data also show some important differences among the states. The total male samples are 15,979 in California, 5,602 in Florida,

and 1,970 in Wisconsin, reflecting in part the variations among the states' labor force sizes. Of more significance is the variation in the proportion of cases that are contested in each state. In Wisconsin, 14 percent of the cases were contested (285 of 1,970 cases), compared to 70 percent of the Florida cases (3,937 of 5,602 cases) and 90 percent of the California cases (14,395 of 15,979 cases).[17] Another significant difference involves the mean disability ratings. Among uncontested cases, for example, Wisconsin workers had disability ratings averaging 3.70 percent, whereas Florida workers averaged 5.57 percent and California workers 7.21 percent. For all of the Wisconsin workers—involving both contested and uncontested cases—the average disability rating was 4.63 percent; the corresponding figure for all Florida workers was 12.40 percent and for all California workers 13.91 percent. (Those overall disability ratings for each state were constructed by using the sample sizes for the uncontested and contested cases as weights.) Thus, Wisconsin stands out among the three states for having the fewest contested cases and the lowest disability ratings.

The panel B data show the potential or expected earnings for the workers in the samples. In all three states, workers aged 30-49 had higher expected earnings than younger and older workers, reflecting the normal relationship between age and earnings. As anticipated, in light of previous studies of interstate differences in earnings, California workers in our sample had the highest expected earnings, followed by Wisconsin and then Florida workers. In both California and Florida, potential earnings are markedly higher for workers in the uncontested cases samples than for workers in the contested cases samples, largely because workers in the uncontested samples were relatively high-wage workers before their injuries. In Wisconsin, this differential is less pronounced.[18]

Examination of the data in panels C and D, which show the mean earnings losses and the standard deviations of those losses, reveals further notable similarities and differences among the states. In all three states, the contested cases sample has statistically significant earnings losses for the entire sample and for the workers in each of the disability rating categories in line 1 of panel C (the one exception is for Wisconsin contested cases with 1-2 percent ratings, in which the earnings losses are insignificant). The states differ in the results for uncontested cases, however. In Wisconsin, the entire uncontested sample and all rating categories except 1-2 percent show statistically significant losses. In Florida, except for the 26-50 percent rating category, the earnings losses are not statistically significant, and in California none of the disability

rating categories shows earnings losses. In all three states, earnings losses are greater for contested cases than for uncontested cases for workers with the same disability ratings. Also, among contested cases, back cases consistently show the largest earnings losses and upper extremity cases the smallest losses. There is no stable relationship between age and size of earnings losses.

The average earnings loss for all Wisconsin workers was $3,430 (a figure calculated by taking the weighted average of the $2,519 loss for uncontested cases and the $5,128 loss for contested cases); the loss figures for all Florida workers and all California workers are $4,904 and $7,004, respectively. Since, as previously described, the average disability ratings in the three states were 4.63, 12.40, and 13.91 percent, the results indicate that each 1 percent of disability rating is associated with $741 of earnings losses in Wisconsin, $396 in Florida, and $504 in California. Thus Wisconsin disability ratings appear to be rather stringent in terms of the amount of lost earnings associated with a particular rating compared to the ratings in the other states.

The panel E data on proportional earnings losses also show significant patterns and variations across the three states. The proportional earnings losses increase with higher disability ratings in each of the seven samples, as can be seen by moving to the right in line 1 of panel E of tables 10.1-10.7 (only the Florida uncontested cases show some irregularity in this respect). Another consistent pattern is that contested cases have higher proportional earnings losses than uncontested cases, even when disability ratings are held constant. There are 18 instances in which the panel E, line 1 entry for a state's contested cases can be compared to an entry with the same disability ratings for the state's uncontested cases, and in all 18 instances the contested cases show greater proportional earnings losses. Among the contested cases, trunk cases consistently show the greatest proportional earnings losses and upper extremity cases the least. No such stable relationship exists for differences among workers classified by age.

Wisconsin uncontested cases have higher proportional earnings losses than the uncontested cases in Florida and California. All three states have proportional earnings losses of about 20 percent for their contested cases.[19] When the uncontested and contested cases in each state are combined by using sample sizes as weights, the average proportional earnings loss for all Wisconsin workers works out to .082; for all Florida workers, to .150; and for all California workers, to .179. That is, the

male Wisconsin workers in our uncontested and contested cases samples combined had earnings losses in 1968-73 that averaged 8.2 percent of their potential earnings during the six-year period, and Florida and California workers experienced 15.0 and 17.9 percent losses, respectively. Carrying the comparisons one step further, recall that the panel A discussion indicated that the average disability rating for all Wisconsin workers (including uncontested and contested cases) was 4.63 percent, for Florida workers 12.40 percent, and for California workers 13.91 percent. Thus the ratio of 1968-73 proportional earnings losses to disability ratings was 1.77 in Wisconsin (8.2 percent earnings losses divided by 4.63 percent disability ratings), and the ratios in Florida and California were 1.21 and 1.29, respectively. This is additional evidence that the Wisconsin ratings are stringent in terms of the extent of earnings losses associated with a particular rating compared to the ratings in Florida and California.

The panel F data on net benefits show some similarities among the states, although the differences are more pronounced. All states pay higher benefits on average to workers with higher disability ratings (as shown by moving to the right on line 1 of panel E), and all states show higher average benefits for contested cases than for uncontested cases, largely reflecting the more serious injuries experienced by typical workers in contested cases. For uncontested cases, the Wisconsin sample had average benefits of $2,150, more than the Florida average of $1,372 and the California average of $2,032. For contested cases, the Wisconsin sample had average benefits of $5,128, more than the Florida average of $3,534 and the California averages for two contested cases samples of $4,934 and $2,905. Because a relatively high proportion of Wisconsin cases is uncontested, however, the average benefit for all Wisconsin workers was $2,580, less than the Florida average of $2,891 and the California average of $3,226. (These averages were constructed by using the sample sizes in each state as weights.) Again extending the comparison, it is interesting that the benefits associated with each 1 percent of disability rating were $557 in Wisconsin ($2,580 average benefits divided by the average disability rating of 4.63 percent), more than twice the benefits per 1 percent of rating of $233 in Florida and $232 in California. The difference between Wisconsin and the other states reflects in part the differences in benefit formulas discussed earlier in this section and the smaller percentage of gross benefits in Wisconsin used to pay attorneys' fees.

The final comparisons among the three states are based on the panel G data, which are the replacement rates (benefits divided by earnings losses). In each state, the replacement rate for the uncontested cases was higher than for the contested cases. The replacement rate is in the range of .4 to .6 for all the samples of contested cases, meaning that benefits replaced between 40 and 60 percent of earnings losses for these workers. The replacement rate is much more variable for uncontested cases: benefits replaced 85 percent of earnings losses for Wisconsin workers and 724 percent of earnings losses for Florida workers; California workers in the uncontested cases sample on average had no earnings losses to replace, and so the replacement rate can be considered infinite.

For contested cases in all three states, the replacement rates tend to increase for workers with higher disability ratings (as shown by moving to the right in line 1 of panel E), although a drop in the replacement rate for the most serious category of injuries occurs for the Wisconsin sample and the two contested cases samples in California. The apparent general tendency for replacement rates to increase with disability severity must be viewed with caution, since for the most serious cases, significant earnings losses probably continue after the 1968-73 period, whereas most workers' compensation benefits were exhausted during that period; if replacement rates were calculated for a period extending beyond 1973, the replacement rates would probably drop more rapidly for serious injury cases than for minor injury cases. There are no obvious and pronounced relationships between replacement rates and age or part of body injured. In both Florida and California, trunk cases have the lowest replacement rates in the controverted cases samples, but this relationship is not found in Wisconsin.

The overall replacement rate for all Wisconsin workers was .75, indicating that benefits replaced 75 percent of lost earnings for the workers. In Florida, benefits replaced 59 percent of lost earnings, while in California the benefits replaced 46 percent of earnings losses. (These averages were constructed by using sample sizes as weights.) Underlying these differences in overall replacement rates is an interesting set of relationships. For a given disability rating, say 10 percent, Wisconsin workers on average experience somewhat greater earnings losses than do workers in Florida or in California ($7,410 in Wisconsin, $3,960 in Florida, and $5,040 in California) but the Wisconsin workers on average received considerably more benefits for the same rating ($5,570 in Wisconsin versus $2,330 in Florida and $2,320 in California), and so the ratio

of benefits to earnings losses—the replacement rate—was higher in Wisconsin (.75) than in Florida (.59) or California (.46).

The preceding comparisons have been based on the entire sample line (line 1) or the Total column, but the panel G replacement rates in the cells defined by lines 2-9 and the several rating columns also deserve attention. The dominant characteristic of these rates in all the tables is the considerable variability as comparisons are made by moving down a column or across a row. For example, for the Wisconsin male uncontested cases, the average replacement rate for all workers with 3-5 percent ratings is .90 (table 10.1, panel G, line 1), but when these cases are disaggregated by age (lines 2-5) the replacement rates vary from .33 to 9.91, and when they are disaggregated by part of body injured (lines 6-9) the replacement rates vary from .58 to 1.22. The significance of this characteristic variability is considered in chapter 11.

NOTES

1. More details on the Wisconsin workers' compensation program are included in Berkowitz, Burton, and Vroman (1979), chapter 13, section A, and in chapter 7 of the present study.

2. The idea that a particular consequence of an injury may be the operational basis for compensation because it serves as a convenient proxy for other consequences of the injury is discussed in chapter 2.

3. The methodology for the NSF research and the Wisconsin results are discussed in detail in chapters 10 and 13 of Berkowitz, Burton, and Vroman (1979).

4. A sample of Wisconsin females is discussed in Berkowitz, Burton, and Vroman (1979), chapter 13. The results are less reliable due to the smaller sample size and problems with control methodology.

5. As explained in chapter 10 of the *NSF Report* (Berkowitz, Burton, and Vroman, 1979), data on education, assets, marital status, and work experience (which human capital studies suggest would be useful predictors of EGR behavior) were unavailable for the workers in our sample.

The *NSF Report* also presents results (in appendices to chapters 11-13) of an alternative method of calculating potential earnings that relies on the actual earnings experience of California workers in the Continuous Work History Sample (CWHS) maintained by the Social Security Administration. The results using the CWHS control group methodology are generally consistent with those shown in tables 10.1-10.7 of this report.

6. More details on the Florida workers' compensation program are included in Berkowitz, Burton, and Vroman (1979), chapter 12, section A, and in chapter 9 of the present study.

7. The lack of information in the folders for washout cases about the basis for the settlement causes problems because typically the settlement amount includes an unspecified payment to defray future medical expenses. We adopted the procedure used by the Florida Bureau of Workers' Compensation to allocate the settlement amounts in compromise and release agreements between cash

benefits and medical benefits. For settlements up to $10,000, 70 percent was allocated to cash benefits; for settlements between $10,000 and $15,000, 60 percent was allocated to cash benefits; and for settlements over $15,000, 50 percent was allocated to cash benefits. The estimates of cash benefits were then divided by the weekly benefit rate to produce an implied number of weeks, which then served as the basis for the Florida estimates of the extent of disability. Compared to the procedure used to rate California compromise and release cases, the Florida procedure tends to lower the disability rating and the amount of cash benefits.

8. The Florida cases are discussed in detail in chapter 12 of Berkowitz, Burton, and Vroman (1979), which also includes information on a sample of female controverted cases.

9. For many Florida workers, the Z-16 time charge is derived from the disability rating that is used to determine the duration of permanent disability benefits. This derivation of Z-16 charges from the disability ratings occurs in nonscheduled cases and in cases resolved by compromise and release agreements.

10. More details on the California workers' compensation program are included in Berkowitz, Burton, and Vroman (1979), chapter 11, section A, and in the first section of chapter 7 of the present study.

11. The California cases are discussed in detail in chapter 11 of Berkowitz, Burton, and Vroman (1979), which also includes information on a sample of females with formal ratings.

12. A case that had an informal rating that did not serve as the basis for benefits (because, e.g., the case was subsequently resolved by an award by a workers' compensation judge) was dropped from the male informal sample.

13. Some cases with formal ratings from the Disability Evaluation Bureau were resolved by compromise and release agreements or findings and awards where the amount of permanent disability benefits did not correspond to the disability ratings in the formal ratings. The percent rating for these cases is based on the general procedure discussed *infra* in the text that derives the disability rating from the amount of the permanent disability award.

14. The problems of constructing disability ratings and the implications for comparisons of workers within and among states are discussed in Berkowitz, Burton, and Vroman (1979), chapters 10 and 14.

One problem is that compromise and release agreements often include an unspecified sum to cover future medical expenses. In California, the first state in which we collected data for the NSF study, we were unable to determine from case folders for compromise and release cases how to separate the amounts for future medical expenses from the amounts for cash benefits for permanent disability, and we treated the entire amount of the settlement as cash benefits. This procedure raised the disability rating in any case where part of the settlement was for future medical, since—as explained in the text—the disability rating was calculated by dividing the permanent disability award by four times the weekly rate for permanent disability benefits. In some instances—most notably serious back injuries—our procedure produced implicit disability ratings that exceeded 100 percent. While the estimating procedure for disability ratings thus tended to exaggerate the ratings for those cases in which the compromise and release settlement contained an amount for future medical, the procedure also tended to exaggerate the amount of cash benefits and understate the amount of medical benefits received in these cases. Since the test for adequacy of benefits discussed in section G compares cash benefits to earnings losses, our procedure tends to overstate the adequacy of the California workers' compensation benefits.

Compromise and release cases were handled differently in Florida. There the Bureau of Workers' Compensation had devised a procedure to allocate compromise and release settlement amounts between cash benefits and medical benefits, and we adopted the Bureau's procedure, as discussed in footnote 7.

Compromise and release cases were handled still differently in Wisconsin, where they are unusual. Case folders were examined and settlement amounts were allocated between cash benefits and medical care on a case-by-case basis. The estimates of the permanent disability cash benefits were divided by the weekly permanent disability benefit rate to produce an implied number of weeks, which when divided by 10 produced the permanent disability rating for the case. Because compromise and release cases are unusual in Wisconsin and because the files normally contained sufficient information to permit allocations between cash benefits and medical care, the accuracy of the disability ratings for Wisconsin workers is less of a concern than the accuracy of the disability ratings for California and Florida workers.

15. A worker's disability rating and his permanent disability benefits are essentially simultaneously determined. For workers with identical ratings (informal or formal), total benefits differ only to the extent the workers received different amounts of temporary disability benefits or had different weekly rates for permanent benefits (an uncommon occurrence for the California workers injured in 1968, since most received the $52.50 per week maximum benefit). For workers without disability ratings from the rating bureau or who received an award or settlement subsequent to receiving a rating from the rating bureau, a disability rating was simulated using the procedure described in footnote 14. The inherently close relationship between disability ratings and amounts of benefits means that no particular significance should be attached to the relatively close relationship between benefit amounts and disability ratings shown in panel F of tables 10.5–10.7. What is not inherently close is the relationship between loss of earnings on the one hand and the disability rating or amount of benefits on the other. As panels C, F, and G of tables 10.5–10.7 show, these relationships are not particularly close.

The inherent relationship between disability ratings and benefit amounts and the lack of particular significance for the relationship is also true for the Wisconsin and Florida results shown in tables 10.1–10.4.

16. A more extensive comparison of the empirical results involving California, Florida, and Wisconsin is included in Berkowitz, Burton, and Vroman [1979], chapter 14. The three states are evaluated in terms of adequacy, equity, and efficiency in chapter 11, *infra*.

17. The term "contested cases" is used in this comparison to include all cases in which the parties have indicated to the state agency that they disagree over some aspect of the case that they would like the agency to resolve or in which the parties resolved a disagreement by negotiations and approval of the negotiated settlement by the state agency is required. Thus the term "contested case" includes *inter alia* cases resolved by an agency decision after a formal hearing and compromise and release agreements, which require agency approval in Florida, Wisconsin, and California.

18. California workers in the male informal sample had 1966-67 earnings that on average were $2,633 higher than the 1966-67 earnings of workers in the male formal sample and $3,288 higher than the 1966-67 earnings of workers in the Other WCAB sample (Berkowitz, Burton, and Vroman [1979], chapter 11). Florida workers in the male regular sample had 1966-67 earnings that on average were $2,105 higher than the 1966-67 earnings of workers in the male controverted sample (Berkowitz, Burton, and Vroman [1979], chapter 12). Wisconsin workers in the male uncontested sample had 1966-67 earnings that on average were only $781 higher than the 1966-67

earnings of workers in the male contested sample (Berkowitz, Burton, and Vroman [1979], chapter 13). All of the intrastate differences in sample means were statistically significant.

19. The California male formal cases have proportional earnings losses of .265 and the California Other WCAB cases have losses of .185 (tables 10.6-10.7, panel E). A weighted average of the proportional earnings losses for these two samples of contested cases is .203.

Part IV
Evaluation
and
Possible Reforms

Chapter 11
Evaluation of Permanent Disability Benefits

This chapter evaluates the performance of the workers' compensation program in providing permanent partial disability benefits. Chapter 12 discusses some of the policy alternatives that could be used to improve the performance.

The criteria we use to evaluate permanent disability benefits are those articulated in chapter 2: permanent partial benefits should be adequate, equitable, and efficiently provided.[1]

Replacement Rates as Tests of Adequacy and Equity

The evaluation of the adequacy and equity of permanent partial disability benefits will largely rely on the replacement rates shown in tables 10.1-10.7 for the workers' compensation programs in California, Florida, and Wisconsin. The adequacy and equity tests will be applied following a review of some conceptual issues and limitations of our data.

(1) *Which consequences should be compensable?* As discussed in chapter 2, there are two possible purposes for permanent disability benefits: to compensate workers for work disability (loss of actual earnings or loss of earning capacity), and to compensate workers for permanent impairments or the other consequences of their injuries or diseases. Our assessment of the adequacy of permanent disability benefits assumes their only purpose is to compensate for work disability. This assumption, which seems warranted since most workers' compensation programs purport to pay benefits only for work disability, tends to improve the Wisconsin, Florida, and California records. If a portion of the benefits were considered payments for impairment, the balance of the benefits (which would be considered payments for work disability) would be less adequate in comparison to the loss of earnings.

(2) *Which is the relevant aspect of work disability?* We assume that actual loss of earnings, as opposed to loss of earning capacity (see chart 1.2), is the proper measure of work disability. Although state programs

are more likely to operationally base the permanent disability benefits on loss of earning capacity, they presumably do so because they expect that loss of capacity will manifest itself in some subsequent actual loss of earnings.

(3) *How should earnings losses be measured?* A fundamental issue in measuring the extent of earnings losses is deciding the reference wage against which the disabled worker's actual earnings will be compared in order to determine the extent of earnings losses. Operationally in workers' compensation, the reference wage almost invariably is the worker's own wage before the occurrence of the work-related disability. A conceptually superior reference wage is the earnings the worker would have earned if he had not experienced the work-related injury or disease. Calculation of this reference wage requires a projection of the worker's predisability wage into the future, ideally on the basis of factors such as the worker's age, sex, education, work experience, and other characteristics that affect age-earnings profiles. In our study, data on many of these factors are unavailable and postinjury potential earnings were estimated on the basis of each worker's preinjury earnings, age, and sex.

Earnings losses should be measured as the difference between the projected earnings and the worker's actual earnings in the postinjury period, where the actual earnings are adjusted to reflect any other factor than the work injury that affects the earnings. If, for example, two years after the work injury the worker is involved in a nonwork accident that affects his earnings, the actual earnings figure should be adjusted. Our data do not permit adjustments on a case-by-case basis for these other influences on postinjury earnings, since our only sources of information are the workers' compensation agency files and the Social Security summary earnings records. Our methodology, however, accounts for these other influences when the results for groups of workers are considered. The workers in our control group are also subject to these postinjury influences on actual earnings, and thus the earnings growth ratios (EGRs) described in chapter 10 that were derived from the actual earnings in 1968-73 of the control group workers have built into them the influence of the factors other than work injuries that affect actual earnings.[2] In short, the earnings losses we show are associated with the 1968 injuries to the workers in our samples and are in excess of earnings losses caused by other adverse events that influenced these workers from 1968 to 1973.[3]

The accuracy of the estimates of earnings losses for individuals is also limited because of the data source we used for earnings. Social Security earnings records do not include information on all types of earnings (for example, some state and local government employees are not covered by the Social Security system). Also, the records only include reports of actual earnings up to the taxable maximum; estimates of total annual earnings were made for workers who reached the taxable maximum.

The limitations of our data mean that our results must be used with some caution. Estimates of potential earnings, actual earnings, and earnings losses for individual workers are particularly vulnerable to error. Results for groups of workers, however, are more reliable, as evidenced by the statistical significance of the earnings losses for many of the groups of workers shown in the C panels of tables 10.1–10.7.

For some cells in the C panels, our estimates of mean earnings losses are negative (the replacement rates in corresponding cells in the G panels are missing). This occurrence is pronounced for the cases with 1–5 percent ratings for the California male informal cases (table 10.5) and the Florida male regular cases (table 10.3). In only one instance, however, are the negative earnings losses statistically significant (table 10.5). In other words, our estimates of actual earnings for some workers in 1968–73 exceed, in all but one case by a statistically insignificant amount, our estimates of potential earnings for these workers. We interpret these negative entries to mean that average earnings losses were essentially zero and that very high average replacement rates (in excess of 100 percent) should be inferred for the workers in these cells.

(4) *What is the proper measure of earnings?* According to the National Commission, the "basic measure of the worker's economic loss is the lifetime diminution in remuneration attributable to the work-related injury or disease. This can roughly be described as wage loss, although remuneration is composed of earnings plus supplements." (National Commission *Report* 1972, p. 36). Supplements include fringe benefits, such as health insurance, and legally mandated employer expenditures. The Commission concluded that the appropriate measure of lost remuneration is not the difference between total remuneration before and after the disability, but the difference in net remuneration. This comparison reflects factors that are affected by disability such as taxes, work-related expenses, some fringe benefits that lapse, and the worker's uncompensated expenses resulting from the work-related impairment.

It is exceedingly difficult to use the National Commission's measure of the worker's economic loss. Data on fringe benefits, taxes, and other factors are not routinely collected by workers' compensation agencies, and are difficult to obtain without extensive contacts with workers and their employers. Also, the Social Security records of earnings have no data on supplements or income taxes.

These difficulties of data collection mean that most researchers do not use the net remuneration concept described by the National Commission, but instead use data that are conceptually less appropriate but operationally much more accessible. Such data are used in part III, because the realistic alternatives are no data at all or better data for a much smaller sample. We believe the data, despite their deficiencies, are reasonably appropriate for evaluation purposes. Nonetheless, we acknowledge that the assessment of the adequacy and equity of the workers' compensation benefits must be made without any direct information for items such as taxes and fringes. The direction of any bias in the assessment because of these omissions is unclear. The absence of information on fringe benefits means the measure of earnings understates the total amount of lost remuneration. On the other hand, since workers' compensation benefits are tax free while the income lost because of the injury would have been taxed if received, the earnings-losses replacement rates may understate the effective proportion of net remuneration replaced by workers' compensation benefits.

(5) *How should attorneys' fees be treated?* Another issue is whether the gross benefits paid by the employer or the benefits net of attorneys' fees received by the worker should be counted. We believe the appropriate measure of benefits for the adequacy test is benefits net of attorneys' fees. For a worker, although the payment of an attorney's fee may be a good investment, only the amount of the award that remains is available to replace lost earnings.

(6) *Should benefits from other programs be considered?* Workers' compensation benefits are not the only source of disability benefits received by workers. Many workers with serious injuries, for instance, may be receiving Social Security Disability Insurance benefits or other forms of government or private assistance. In principle, these benefits should be included when considering the adequacy and equity of benefits. In practice, information on the supplementation of workers' compensation benefits by private or public sources is fragmentary.[8] Our data are for that reason confined to workers' compensation benefits. In general,

supplementation of workers' compensation benefits probably is not significant for most workers with nonserious injuries but is likely to be relatively important for older workers and for workers with serious injuries.

(7) *Over what period should earnings losses and benefits be calculated?* The period over which earnings losses and benefits are calculated will affect the assessment of adequacy. In principle, the data should pertain to the worker's entire life, since losses and benefits may persist over long periods. The data in tables 10.1 to 10.7, however, pertain only to 1968-73 (for reasons explained in chapter 10). Among younger workers and workers with high disability ratings, post-1973 earnings losses are probably much larger than post-1973 benefits. Thus the replacement rates are biased upward for the serious injury cases and for the injuries involving younger workers compared to the replacement rates that would be found if lifetime benefits and lifetime earnings losses were compared. Overall, the limitation of our data to 1968-73 means that our replacement rates overstate the adequacy of the benefits in Wisconsin, Florida, and California.

(8) *Should the individual or the family be analyzed?* Much of the recent literature on labor supply has used the family as the unit of analysis, and this approach has been useful in analyzing topics such as retirement decisions and labor force participation for women. Because of the limitations of our data, our estimates of earnings losses pertain only to the injured workers, and because the disability of the workers may cause other family members to increase their participation in the labor market, our estimates exaggerate the total loss of family income caused by the work-related injuries. Also, other family members may qualify for benefits from a social insurance program because of the worker's injury. If these additional transfer payments and earnings were considered and the family were used as the unit of analysis, the replacement rates probably would increase.

A Recapitulation of the Eight Factors. We recognize there are several limitations to the replacement rates used in this study. (1) If workers' compensation benefits are meant in part to provide compensation for consequences other than work disability, then our replacement rates are too high. (2) We assume that actual loss of earnings—not loss of earnings capacity—is the proper measure of work disability. It is not clear which measure of work disability would be larger, so there is no clear implication for the size of our replacement rates. (3) The accuracy of

the replacement rates depends on the accuracy of our estimates of the workers' potential earnings, of their actual earnings, and of the benefits received by workers after their injuries. Particularly for the first of these estimates, we recognize that our data have some limitations. However, there is no reason to believe our estimates of the total earnings losses in each state are too high or too low, and thus no reason to think the estimating problem biases our replacement rates either way. (4) Our estimates of earnings losses probably exaggerate the workers' losses of spendable earnings because of the effect of payroll and income taxes, but understate the loss of total remuneration since fringe benefits that lapse because of the work-related injury are not considered. These factors have contrary implications for the size of our replacement rates and it is not evident which dominates. (5) We assume that attorneys' fees should be deducted before benefits are compared to earnings losses, a decision that tends to reduce our replacement rates, especially for serious injury cases that are more likely to involve litigation. (6) Other transfer payments besides workers' compensation benefits are not considered. In the case of Social Security Disability Insurance benefits, we know that older workers and workers with higher disability ratings are more likely to receive these benefits. (See Vroman 1977.) If all transfer payments were considered, the replacement rates would be higher in general, and probably would increase most substantially for older workers and workers with serious injuries. (7) The replacement rates cover benefits and earnings losses for 1968-73, and not post-1973 developments. Among younger workers and workers with high disability ratings, post-1973 earnings losses are probably much larger than post-1973 benefits. Thus the replacement rates in tables 10.1 to 10.7 are biased upward for the serious injury cases and for the injuries involving younger workers compared to the replacement rates that would be found if lifetime benefits and lifetime earnings losses were compared. (8) Our estimates of earnings losses pertain only to the injured workers, and because the disability of the workers may cause other family members to increase their participation in the labor market, our estimates exaggerate the total loss of family income caused by the work-related injuries.

Implications of the Eight Factors for the Adequacy Test. The adequacy test is primarily concerned with the average replacement rate for all workers in a state included in the restricted universe from which our sample was drawn. Two of the factors just discussed (numbers 2 and 3) have no obvious implications for the size of our replacement

rates. Three of the factors (numbers 5, 6, and 8) tend to make our replacement rates too low, while two factors (numbers 1 and 7) tend to make our replacement rates too high. The fourth factor has conflicting components and the net influence of the factor on the size of our replacement rates is unclear. The overall impact of the eight factors on the value of the average replacement rate in each state is also unclear. The only solution that seems feasible is to use the state-wide replacement rates without any adjustments, recognizing that the values may be too high, too low, or just right.

Implications of the Eight Factors for the Equity Test. The equity test is primarily concerned with comparisons among the replacement rates for the different cells of the samples within each state, where the cells are defined by age, sex, nature and severity of injury, and type of administrative procedure used to provide the benefits.

The effect of five factors (numbers 1-4 and 8) should be reasonably uniform across the individual cells in tables 10.1-10.7, and should not seriously affect our equity evaluation. If our exclusion of attorneys' fees is improper (number 5), our replacement rates for serious injuries are too low compared to those for minor injuries.

The implication of the seventh factor is that our replacement rates are too high for cases involving serious injuries and younger workers (since we ignore post-1973 developments), while the sixth factor means that the replacement rates are too low for cases involving serious injuries in older workers (since transfer payments other than workers' compensation are more likely for serious injuries in older workers). The sixth and seventh factors appear to offset each other insofar as they give rise to biases in our replacement rates involving serious versus nonserious injuries, but the two factors both suggest that our replacement rates tend to understate the adverse consequences for younger workers relative to the adverse consequences for older workers.

Although these eight factors complicate the evaluation of the replacement rates on the basis of equity, we believe that the problems are not so serious that evaluation is untenable.

Adequate Permanent Disability Benefits

Before we apply the adequacy test, an additional question must be answered: what proportion of earnings losses should be replaced by workers' compensation benefits? As discussed in chapter 2, the Na-

tional Commission on State Workmen's Compensation Laws indicated that benefits should "provide substantial protection against interruption of income." But the National Commission did not make specific recommendations for permanent partial disability benefits that would permit a translation of providing "substantial protection against interruption of income" into a numerical or quantitative standard. For temporary total and permanent total disability, the National Commission recommended that, subject to the state's maximum weekly benefits, the total disability benefits be at least 66 2/3 percent of the difference between the worker's earnings before and after the injury or disease.

The National Commission provided a higher standard for the adequacy of disability benefits when it recommended that permanent total benefits be increased through time in the same proportion as increases in the state's average weekly wage. Similar protection for permanent partial disability would require the benefits to be escalated through time. This scheme would roughly approximate the conceptually superior approach previously discussed of basing benefits on the difference between the wages a worker would have earned if he had not been injured and the wages actually earned after the injury.

We consider the replacement of 66 2/3 percent of earnings losses calculated on the basis of the postinjury potential earnings to be the proper test, but we also recognize this is a stringent test in terms of the traditional approach in workers' compensation, which is to relate benefits to preinjury earnings. A more lenient test for adequacy, which may be particularly appropriate for 1968-73, a period when wages probably grew more rapidly than was expected as of 1968, is that at least 50 percent of earnings losses calculated on the basis of postinjury potential earnings should be replaced by benefits.[6] As indicated in chapter 10, the Wisconsin workers in our sample had 75 percent of their lost earnings replaced by benefits, the Florida workers 59 percent, and the California workers 46 percent, which means that these states as of 1968 had benefits that ranged from adequate by the stringent test (Wisconsin) to adequate by the lenient test (Florida) to somewhat inadequate (California). For these three states as of 1968, we conclude that benefits were generally adequate.

Our findings for California workers injured in 1968 can be compared to the results from *Economic Consequences of Job Injury* (1984), a study conducted by the California Workers' Compensation Institute, hereafter CWCI *Economic Consequences*. The sample included 8,364 cases of

serious claims incurred under workers' compensation insurance policies issued in 1975-76. Earnings records for each worker were obtained from the State Employment Development Department and 1,076 of the workers were also interviewed. Earnings losses for each worker were determined for the four years after the injury. The procedure to estimate the losses was similar to that described in chapter 10 for our wage-loss study, although the CWCI did not escalate preinjury wages over the four years to determine postinjury potential earnings. The interviews allowed the CWCI to eliminate some of the gross earnings losses due to factors other than the work-injury, such as earnings declines due to voluntary retirements. After adjustment to earnings losses for reasons unrelated to the work injuries, the net earnings losses in the four years after the injury averaged $8,080 per worker. The projected net earnings losses over the working lives of the employees averaged $17,700. The study found that on average, workers' compensation income benefits (for both temporary and permanent disability) replaced only 49 percent of the net earnings lost by permanently disabled workers over their working lives, a replacement rate that the CWCI termed inadequate. The CWCI study also extrapolated its results through 1984, considering the general increase in wages after the injury dates for the workers in its sample and the infusion of nearly $1 billion in additional benefits into the California program as a result of 1983-84 benefit changes (described in chapter 7). The net result of the offsetting factors was that the proportion of earnings losses replaced by benefits dropped to 47 percent in 1984 from the previous 49 percent. These results, although based on a methodology somewhat different from ours, are consistent with the replacement rate of 46 percent we found for California workers injured in 1968 and reinforce the conclusion that the state's benefits for permanently disabled workers are inadequate.

Equitable Permanent Disability Benefits

The most straightforward test of equity for disability benefits has two dimensions: *horizontal equity* requires that workers with equal losses of earnings (or losses of earning capacity) should receive equal benefits; a narrow test of *vertical equity* requires that workers with different losses should receive benefits proportional to their losses. A more general test for vertical equity only requires that there be a consistent relationship between losses and benefits. Society may decide, for example, that the proportion of benefits to losses should increase (or decrease) as losses increase. Although the general formulation of vertical equity is more

difficult to translate into empirical tests than the narrow test, reasonable requirements appear to be (1) that the ratio of benefits to earnings losses consistently increase (or decrease) as earnings losses increase, and not fluctuate (that is, that the relationship between the replacement rates and earnings losses be monotonic[7]) and (2) that there should be no abrupt changes in the ratio of benefits to earnings losses as earnings losses increase.

It is possible to have benefits that are inadequate yet equitable. For example, as we use those terms, benefits that replace 10 percent of lost wages for all workers, no matter their ages or types of injury, would be inadequate yet equitable. It is also possible to have benefits that are adequate yet inequitable. For example, on the average for all workers in a state, benefits may replace 70 percent of lost wages, and we would consider such an overall figure to be adequate. If some workers received 100 percent of their lost wages replaced by benefits and others only 40 percent, however, the benefits would be inequitable.

Applying the equity criterion properly requires some sensitivity to the conceptual issues and data limitations discussed above. Of particular relevance are the facts that (1) the replacement rates cover benefits and earnings losses for 1968-73, and not post-1973 developments, and (2) transfer payments other than workers' compensation benefits are not considered. The first factor means our replacement rates are too high for cases involving serious injuries and younger workers, while the second factor means that the replacement rates are too low for cases involving serious injuries and older workers. The two factors appear to offset each other insofar as they introduce biases into our replacement rates involving serious versus nonserious injuries, but they both suggest that our replacement rates tend to understate the adverse consequences for younger workers relative to the adverse consequences for older workers.

Application of the Equity Test. An obvious way to begin applying the equity test is to compare the replacement rates for the entire male samples in the three states. The differences in the replacement rates—.75 for Wisconsin, .59 for Florida, .46 for California—suggest that workers injured in different states in 1968 fared quite differently. There is, in short, interstate inequity.

The Wisconsin results provide a model of how the equity test can be applied within a state.[8] The relationship between replacement rates and severity of disability can be determined by moving across the rows

in panel G of tables 10.1 and 10.2. Examination of each male sample in total (panel G, line 1) reveals a tendency for replacement rates to increase with the size of the disability rating. Although the relation is not strictly monotonic, the results can be considered consistent with the general test of vertical equity.[9] The regularity of the relationship between size of the disability rating and the replacement rates dissolves, however, when the male samples are disaggregated by age or part of body. In other words, moving across the replacement rate values in rows 2 to 9 in panel G of tables 10.1 and 10.2 reveals fluctuations that are inconsistent with any acceptable version of a vertical equity test.

A horizontal equity test is provided by moving down the columns in panel G. The results indicate that workers with similar disability ratings, but with different ages or parts of body injured, experience widely varying rates in terms of the proportion of their earnings losses replaced by workers' compensation benefits: horizontal equity is lacking.

Comparisons of replacement rates by type of administrative procedure are also possible for the two male samples. Not only is the replacement rate higher overall for the uncontested sample than the contested sample (85 percent versus 58 percent), the replacement rate is consistently higher for the uncontested sample for each of the entries in line 1 of panel G of tables 10.1 and 10.2. Contested cases do not fare as well as uncontested cases in Wisconsin in terms of replacement rates.

Overall conclusions about the equity of Wisconsin workers' compensation benefits must be made with some caution, both because of the previously remarked problems in calculating the replacement rates and because of the choices for equity standards, particularly in determining the appropriate tests for vertical equity. Subject to these cautions, several conclusions can be drawn from the Wisconsin data. First, there is some evidence from Wisconsin consistent with the equity test. For example, the Total column of the male contested cases (table 10.2, panel G) indicates a reasonable consistency in replacement rates across workers classified by age and by injured part of body. Also, there is an overall relationship between replacement rates and severity of disability that is reasonably consistent with a vertical equity test for both the male uncontested and male contested cases (tables 10.1 and 10.2, panel G, line 1). Second, there is some evidence of systematic differences in replacement rates among workers that violate the equity test in Wisconsin. For example, the replacement rates for males in the uncontested sample consistently exceed those for males in the contested sample, even

when severity of disability is held constant, and this appears inconsistent with the horizontal equity test. Third, the Wisconsin results provide numerous examples of unsystematic differences in replacement rates among groups of workers that violate horizontal and vertical equity. Both tables demonstrate erratic movement in replacement rates as one moves down the columns in panel G, which violates the test for horizontal equity, for example. Fourth, the comparisons made so far pertain to differences among the mean replacement rates for groups of workers. Given the problems of estimating earnings losses for individual workers, we feel more comfortable about equity tests involving groups of workers. If, however, variations in replacement rates were examined at the individual worker level, the large dispersion within cells would suggest extreme problems of achieving equity on an individual basis. (See Berkowitz, Burton, and Vroman 1979, chapter 15, appendix B.)

Similar conclusions about horizontal and vertical equity are appropriate for the Florida male samples shown in tables 10.3 and 10.4. First, the Total column of the male regular cases (table 10.3, panel G) indicates a reasonable consistency in replacement rates across workers classified by age and part of body injured. Also, there is an overall relationship between replacement rates and severity of disability that is reasonably consistent with a vertical equity test for the male controverted cases (table 10.4, panel G, line 1). Second, there is some evidence from Florida of systematic differences in replacement rates among workers that violate the equity test. For example, the replacement rates were consistently low for workers with injuries to the trunk and consistently high for workers with injuries to the upper extremities, after adjusting for age and severity of injury. Also, the replacement rates for males in the regular sample consistently exceed those for males in the controverted sample, even when severity of disability is held constant, and this also violates horizontal equity. Third, there are numerous violations of horizontal and vertical equity shown by the unsystematic fluctuations in replacement rates as one moves down the columns or across the rows in tables 10.3 and 10.4. Finally, even worse equity problems are evident from the variations in replacement rates among the individuals in the cells of the two tables.

The California data in tables 10.5-10.7 also indicate a mixed record of compliance with the horizontal and vertical equity tests, although more effort is needed to find evidence of compliance with the criterion than in the other states. First, there is an overall relationship between replacement rates and severity of disability that is reasonably consis-

tent with a vertical equity test for the male formal cases and male Other WCAB cases (line 1, panel G, of tables 10.6 and 10.7). The replacement rates tend to increase with severity, meeting the general test of vertical equity, although the increase in the replacement rate from .18 to .58 as one moves across table 10.7, panel G, line 1 seems to represent a pronounced inclination to favor serious injuries. In Wisconsin and Florida there was a reasonable consistency in replacement rates across workers classified by age and injured part of body for the Total column of the contested cases, but the two contested case samples in California show much less consistency. To illustrate, the overall replacement rate for the Wisconsin contested cases was .58, and the variation among the eight components of the sample was from .52 to .82 (table 10.2, panel G, Total column); for Florida workers in the controverted case sample, the overall replacement rate was .51 and the variation among the eight components was from .40 to .75 (table 10.4, panel G, Total column); whereas for California workers in the male formal cases sample, the overall replacement rate of .46 when disaggregated into the eight components showed a greater than two-to-one variation (.34 to .69), and the California Other WCAB sample, with an overall replacement rate of .41, reflected a similar variation (.30 to .64) in the disaggregated sample (Total columns of panel G, tables 10.6 and 10.7).

There are some patterns of systematic differences in replacement rates among groups of California workers that violate the equity test. Thus, in the male formal cases and the Other WCAB cases (tables 10.6 and 10.7), workers with back injuries consistently have lower replacement rates than workers in the samples with other types of injuries, but equivalent disability ratings. More compelling than the pattern of inequity are the apparently unsystematic variations in replacement rates among groups of California workers that violate tests of horizontal and vertical equity. These inequities can be found by moving across the rows or down the columns of panel G in tables 10.5-10.7. Finally, if intracell variations in replacement rates were examined, further evidence of inequity would be found.

We conclude that the equity criterion was seriously violated for the benefits provided to the workers injured in 1968 who were in our samples. Although Wisconsin appears to have done somewhat better than Florida, which in turn did somewhat better than California, none of the states appears to have done a satisfactory job of meeting the tests of horizontal and vertical equity. One interesting finding that is consistent with the alternative test of vertical equity is that in all three states,

replacement rates rather consistently increase with the severity of injuries in the contested case samples. This finding casts some doubt on one of the most widely dispensed shibboleths of the workers' compensation field, namely, that permanent partial disability benefits tend to overcompensate minor injuries relative to major injuries. As previously noted, however, the results do not reflect any developments after 1973, when wage losses for serious injuries were likely to continue and benefits were largely ended, which means the earnings-losses replacement rates are likely to decline over time for serious injuries. Even if a modicum of vertical equity is provided by the relationship between severity and replacement rates, our overall assessment of the permanent partial disability benefits on the equity criterion is that there are relatively serious shortcomings. We do not suggest that the benefits will not provide even a rough sort of justice. We do believe, however, that the deficiencies on the equity criterion are much more serious than the deficiencies on the adequacy criterion.

Our findings of inequitable benefits for California workers were supported by the evidence in the recent study by the California Workers' Compensation Institute, CWCI *Economic Consequences*. As described in the adequacy section, the CWCI methodology was somewhat different from the methods used in our wage-loss study (chapter 10). The CWCI, for example, projected earnings losses over the working lives of the employees, whereas we confined our estimates to the six-year period after date of injury. This probably explains why we found that replacement rates increased with severity, while the CWCI found that the replacement rates for permanently and partially disabled workers declined with the severity of the injury: from 88 percent for workers with permanent disability ratings of 1-9 percent to a replacement rate of 32 percent for workers with 70-99 percent ratings. The replacement rate for permanent total disability cases was 64 percent, reflecting the higher maximum weekly benefit for total disability than for partial disability. The CWCI (*Economic Consequences*) found that "replacement rates vary widely according to injury severity and the age of the worker" (p. 7), which led the Institute to criticize the California benefits as inequitable because "replacement of earnings loss due to the injury is not accomplished in any rational matter" (p. 8). Although the particulars of our results and those in the CWCI *Economic Consequences* differ, the central message does not: there are serious inequities in the permanent disability benefits for injured workers.

Efficient Permanent Disability Benefits

The question of efficiency concerns the administrative costs of providing benefits incurred by the participants in the workers' compensation delivery system, including employers, insurance carriers, workers, attorneys, and governmental agencies. The term *efficiency* is used to describe two concepts, as explained in chapter 2. One meaning of efficiency, termed *myopic efficiency*, is that administrative costs are at the lowest possible level without regard to the quality of benefits provided. Although this disregard for quality is usually not made explicit, it appears that what some people mean by maximum efficiency is the cheapest delivery system. The other meaning of efficiency, termed *panoramic efficiency*, is that a particular quality of benefits is provided at the least possible administrative costs. Thus, if two delivery systems provide benefits of equal adequacy and equity, the delivery system that does so with lower administrative costs has greater panoramic efficiency.

We do not believe it is meaningful to say that one delivery system has lower administrative costs than another delivery system unless the differences in the quality of the benefits are specified. Only with the latter information can judgments be made about the relevant concept, namely the panoramic efficiency of the delivery systems.

There are other criteria for judging a delivery system that can be considered part of a broadly defined efficiency test. First, the delivery system should not aggravate the problem the benefits are meant to remedy. Thus, if a particular delivery system induces workers to prolong unnecessarily their periods of work disability or to exacerbate their functional limitations, that system *ceteris paribus* is less efficient than a delivery system without these inducements. Second, the delivery system should facilitate (or at least not impede) the achievement of the objectives of workers' compensation other than providing adequate and equitable cash benefits. Thus, a particular delivery system that helps achieve the safety objective is preferable to a system that does not, *ceteris paribus*.

Evaluation using the efficiency criterion is especially difficult. For one thing, data on the expenses of administering the program that are borne by employers and others in the private sector, the amount of attorneys' fees, and the lags in payments of permanent disability benefits after a workers' condition is permanent and stationary, as well as a variety of other types of data relevant to the assessment of the efficiency

of the delivery system, are scarce. Another reason the efficiency criterion is hard to apply is that the quality of benefits and the administrative costs must be simultaneously considered in order to evaluate the panoramic efficiency of a state's workers' compensation program. It would be foolish, for example, to prefer one jurisdiction merely because its administrative costs are lower than the costs in a second jurisdiction. The first jurisdiction's administrative costs may result from lower-quality benefits, and thus represent no greater panoramic efficiency. (In terms of graph 2.2, the two jurisdictions could simply be at different points on the Quality/Costs Constraint line.)

Application of the Efficiency Test. An important aspect of the efficiency test concerns the types of delivery system used to provide workers' compensation benefits. One model (typified by Wisconsin) relies on an active state agency that makes many decisions itself, closely supervises the operation of employers and private carriers, and limits the role for attorneys. A considerably different mode (typified by the federally operated Longshore and Harbor Workers' Compensation Act) relies on the private parties, particularly attorneys, to make most of the decisions about benefit payments. The agency is essentially passive, although it will resolve disputes brought to it by the private parties. An intermediate model (typified by Florida prior to the 1979 reforms and by California) involves a state agency that conducts a minimal review of the decisions made by the private parties and that resolves disputes in a relatively high proportion of the cases, but that nonetheless relies on extensive attorney involvement to make the delivery system operate.

How attorneys are used is an important feature differentiating these three delivery system models. As recounted by many commentators on the history of workers' compensation, the original notion was that the elimination of the fault concept and the prescription of benefits by statute would enable employees to protect their interest without external assistance. From that standpoint, the substantial reliance on lawyers in California and Florida before 1979 suggests at the minimum a lack of myopic efficiency. And yet the involvement of attorneys can also be viewed as a *prima facie* indictment of the idea that workers' compensation laws can be self-administering; attorneys may be in the system because they help achieve the criteria of adequate and equitable benefits. In other words, their involvement may represent a lack of myopic efficiency but not a lack of panoramic efficiency. Whether, in fact, attorneys help achieve the equity and adequacy of benefits is not clear *a priori*. On one hand, they receive fees that generally are subtracted from the

workers' awards, which, in a nominal sense, reduces the adequacy of the benefits. On the other hand, attorneys increase the awards in some cases in which they are involved and probably have an indirect impact on the amount of benefits in other cases in which they are not involved (similar to the "threat" effect that unions have on wages in nonunionized firms). Thus on *a priori* grounds, the impact of attorneys on the adequacy of benefits is unclear. Likewise, the impact of attorneys on the equity of benefits is unclear. They may take cases in which benefits would otherwise be inappropriately low, or alternatively their involvement may be on a basis unrelated to the relative undercompensation of the case, such as the worker's membership in a union.

The data from Wisconsin, Florida, and California shed some light on the question of whether the use of attorneys improves panoramic efficiency. In terms of the ability to deliver benefits without litigation, Wisconsin clearly surpassed California and Florida before 1979. As shown by the distribution of cases between tables 10.1 and 10.2, more than 5 out of 6 permanent partial disability cases in Wisconsin were resolved without a contest (including use of compromise and release agreements). By contrast, more than 2 out of 3 Florida permanent disability cases were controverted, and only 1 in 10 California permanent disability cases was resolved by use of informal ratings rather than reliance on a more litigious approach, such as use of a compromise and release agreement or a formal hearing before an Administrative Law Judge. A related finding is that legal fees amounted to only about 3 percent of benefits for the workers in our Wisconsin sample, compared to about 12 percent in Florida and about 6 percent in California.

Wisconsin thus appeared to be superior to California and Florida in the handling of permanent partial disability benefits without excessive litigation, thus providing some evidence that it had greater myopic efficiency. Moreover, the Wisconsin benefits for the workers in our samples were more adequate and more equitable than the Florida and California benefits, suggesting that the Wisconsin delivery system also provided greater panoramic efficiency than the delivery systems in the other two states. We believe this conclusion is valid even when consideration is taken of the administrative expenditures in both the public and private sectors, including the expenses of operating the state workers' compensation agencies and state courts as well as the cost of attorneys' fees for claimants, employers, and carriers. The Wisconsin agency has a particularly impressive record in terms of budget and staff compared to the other jurisdictions in our study (table 4.1).

The Florida and California delivery systems are representative of the systems in most of the jurisdictions in our ten-state study. There appears to be a general concern for myopic efficiency in workers' compensation, which manifests itself in inadequate resources for state agencies and undue reliance on litigation. The consequence of this narrow concern appears to be a loss of panoramic efficiency.

Conclusions

Our overall evaluation of permanent partial disability benefits in the workers' compensation jurisdictions included in our wage-loss study and in our 10-state study is based on the criteria of adequacy, equity, and efficiency. *Adequacy* was not a major problem as of 1968, the date when the workers in the three states in our wage-loss study were injured. The major failing we have documented is the lack of *equity* of the permanent partial disability benefits. The three states we examined most intensively—California, Florida, and Wisconsin—provide considerable evidence that the benefits were not closely matched to the workers with earnings losses. This judgment is based to a large extent on our sample of workers injured in 1968, but there is little reason to believe that workers injured more recently would have done any better on the equity criterion. Only in Florida have the criteria used to determine the amount of permanent partial disability benefits and the procedures used to provide these benefits changed significantly since 1968, and—as stressed in chapter 9—there are no data indicating the impact of these changes on equity. *Efficiency* was also a significant problem in most jurisdictions, although Wisconsin did reasonably well on this criterion.

The balance of the section attempts to identify the causes of the deficiencies of adequacy, equity, and efficiency.

Lack of Adequacy was not a major problem in the three states in the wage-loss study. Underlying this conclusion are some interesting findings. One is that the adequacy of permanent partial disability benefits is almost impossible to evaluate simply by looking at the statutory provisions of a workers' compensation program. For example, the Wisconsin statute as of 1968 had a maximum weekly benefit for permanent partial disability benefits of $47.50, and the benefits were paid for a maximum duration of a thousand weeks. This was in contrast to Florida, where the weekly maximum for permanent partial disability benefits was $49.00 and the maximum number of weeks was 350. The statutory

provisions suggest that Wisconsin permanent partial disability benefits would be much more adequate than those in Florida. Our evidence suggests, however, that the permanent partial disability rating standards are much more stringent in Wisconsin than in Florida,[10] and so for a given injury the apparently greater benefits provided by the Wisconsin statute were partially offset by a lower disability rating. The end result was that the adequacy of the Florida and Wisconsin benefits in practice appears to be much more similar than the statutes would suggest.

We draw two implications from this comparison of Wisconsin and Florida. An obvious one is that any attempt to assess the differences among states in the adequacy of permanent partial disability benefits must go beyond comparisons of statutory matters such as weekly benefits and maximum durations and must also consider the standards used to rate disabilities. A less obvious implication, and one that the data only suggest and do not prove, is that, given the extent of discretion inherent in most rating systems for permanent partial disabilities, workers' compensation programs have some ability to be self-correcting on the adequacy criterion. If adequacy of permanent partial disability benefits is widely considered a problem in the state because of low weekly maximums and limited durations, the participants in the delivery system have some opportunities to increase the size of the disability ratings in order to compensate for the low statutory provisions and thus provide a rough sort of justice. This phenomenon is hard to document; there are limits to the parties' ability to carry out such a self-correcting practice; and such a strategy is surely not the ideal way to deal with an adequacy problem (especially since the self-correction mechanism probably aggravates any problems of equity); but we sense that this sort of countervailing activity is taking place in some jurisdictions.

Lack of Equity is a major problem, and the causes appear to be a mixture of the procedures used by the state and the criteria for permanent partial disability benefits. Chapter 4 discusses four aspects of the procedures used by state workmen's compensation agencies, namely recordkeeping, monitoring, evaluation, and adjudication. A major source of the lack of equity appears to be inattention by state agencies to the monitoring and evaluation aspects of procedure, and too much emphasis on adjudication. The result is inconsistent treatment of similar injuries because the amount of benefits a worker receives is affected by the policies of his employers or the insurance carrier and by whether the employee hires a lawyer. As we indicated earlier, Wisconsin appears to do better on the equity criterion than California and Florida, and one

reason is that the Wisconsin workers' compensation agency's greater attention to monitoring reduces the importance of employers, carriers, and attorneys in determining the outcome of cases.

Probably even more important than procedural deficiencies as a cause of inequity are the characteristics of the criteria used to evaluate the extent of permanent partial disability (see Burton 1983, pp. 24-28). In general, states use criteria that permit and even require a considerable exercise of discretion, and the almost inevitable result is that similar injuries receive dissimilar ratings. Here again Wisconsin shines in comparison to most states because of its emphasis on objective factors in rating and its use of comprehensive guidelines to evaluate a wide range of impairments and functional limitations. In most states, there is more opportunity for subjective factors (such as pain and lack of endurance) to be considered in evaluating the seriousness of the impairments and functional limitation, and these subjective factors allow the evaluator more room to exercise discretion, which in turn results in inconsistent treatment. Probably the worst of all possible criteria in terms of ensuring consistent treatment is the approach used in most jurisdictions for nonscheduled injuries. This approach allows the loss of wage-earning capacity to be assessed on the basis of facts relevant for the particular case: almost invariably reasonable people can and do differ about the extent of disability for a given worker. Thus the rating criteria now used in most states contain a number of subjective elements or require the assessment of imponderables such as loss of wage-earning capacity, and the considerable exercise of discretion required to apply the criteria results in inconsistent ratings of similar injuries.[11]

Another apparently important source of inequity is the timing of application of the criteria used to evaluate permanent partial disabilities. Ordinarily, a worker's permanent partial disability is rated as soon as his permanent injury is considered stable. This approach requires an *ex ante* assessment of the consequences of a particular injury on a worker's earnings. After reviewing the results in California, Florida, and Wisconsin of these *ex ante* evaluations, we conclude that in a high proportion of cases the states are not able to predict with any reasonable degree of accuracy what the consequences of work-related injuries will be for the workers' labor market experience.

Panoramic *efficiency* is achieved to the extent that benefits of a specified level of adequacy and equity are provided with the least administrative cost.[12] As evidenced by the extent of litigation in most

jurisdictions compared to Wisconsin, inefficiency seems to be a serious problem, since there is no apparent gain in adequacy or equity in these other states compared to Wisconsin. The inefficiency also appears to be caused by a mixture of the procedures and the criteria used to provide permanent partial disability benefits.

The emphasis in most state workers' compensation agencies is on adjudication, not on the other administrative functions such as monitoring and evaluation. Many state agencies fell into this role of being primarily an adjudicatory body by accident. When workers' compensation was established, the view was widely held that the program would be largely self-administrating since benefits amounts and durations were specified in the statute. Unfortunately, in practice the workers' compensation program was complex and required numerous controversial decisions, especially in the area of permanent partial disability benefits. A substantial delivery system was needed to make these decisions, and essentially states had to choose between two types of delivery systems. One allowed the private parties to work out their own arrangements for the administration of the act with state agencies acting as quasi-courts to adjudicate those disputes the parties could not resolve by negotiations. This approach was taken in most states. The alternative type of delivery system turned to the state workers' compensation agency to fill the emerging need for administration; the state agency pursued the record-keeping, monitoring, and evaluation roles. This approach was chosen in only a few states, of which Wisconsin is probably the best example.

The delivery system that makes the workers' compensation agency primarily a quasi-court was chosen in most states for a mixture of reasons. It reflects in part the interest of attorneys and others who benefit from a delivery system that operates largely on the basis of private negotiations and litigation. Another reason is that in most jurisdictions, state administrators have not pursued the model of an active state workers' compensation agency, often because these administrators were drawn from the ranks of practitioners who had never seen the active-agency model in operation. And certainly another important reason is that efficiency is often equated with a small budget—that is, the goal is myopic efficiency, not panoramic efficiency. State legislators often see the cost of running a state agency as the only relevant cost of the delivery system, and by holding down agency costs they provide a strong incentive for the litigation-based approach to a delivery system. What

is often not appreciated is that a low-cost agency is not cheap when the total resource costs of the delivery system are considered.

Another possible reason for the use of a litigious delivery system is that workers may assume they are unlikely to be injured on the job. As a result, they may be unwilling to support an active agency, which requires both time to be established successfully and resources on a continuing basis. When, however, workers are injured on the job (to their surprise), they can obtain crucial assistance from lawyers on short notice. Thus, unwillingness to think about the unpleasant topic of work-related injuries fosters litigation, since legal services can be purchased after the injury occurs, but good administration cannot.

The criteria used to provide permanent partial disability benefits also encourage litigation, which in many jurisdictions appears excessive. Lawyers can make a big difference in the outcome of a case when the criteria are loose, and naturally lawyers are attracted to the program under these circumstances. Again, part of the success of Wisconsin in reducing the incentive to litigation is that comprehensive rating guidelines reduce the chance for disagreement and thus limit the usefulness of lawyers.

We have concluded that the state workers' compensation programs have deficiencies in their permanent partial disability benefits in terms of adequacy, equity, and efficiency, and we have attempted to delineate some of the causes of these deficiencies. The final chapter will examine some policy issues that states can consider in attempting to improve their permanent partial disability programs.

NOTES

1. One qualification of the evaluation in chapter 11 is that the emphasis is on cash benefits, and little attention is given to other objectives of workers' compensation, such as the provision of adequate medical care and the encouragement of safety.

2. We are not able to adjust our estimates of earnings losses to reflect the reduction in labor supply that may be caused by the receipt of workers' compensation benefits. If such a reduction in labor supply occurs, actual earnings after the injury will be reduced and our estimates of the earnings losses caused by the work-related injuries could be exaggerated. We have partially controlled for this benefits-induced reduction in labor supply because the earnings growth ratios (EGRs) for our control group reflect any such reductions for workers with minor permanent partial disability ratings. To the extent that the higher benefits for more serious injuries induce even greater reductions in labor supply, we exaggerated the wage losses caused solely by these injuries.

3. Technically, our control methodology did not follow the procedure described in the text that calculated earnings losses as the difference between potential earnings and actual earnings adjusted to show the adverse impact of factors such as nonwork injuries. We calculated the earnings losses by subtracting unadjusted actual earnings from potential earnings that were adjusted to reflect the impact of the adverse factors. For individual cases the procedure may yield different estimates of earnings losses, but on average the amount of earnings losses in the two procedures is the same.

4. One study of workers who receive multiple benefits is Johnson, Cullinan, and Currington (1979).

5. The eight factors discussed in the text are not the only possible limitations to our replacement rates. Another potential problem is the limitation of our data to those workers injured in 1968 who received permanent disability awards. Some workers may have been injured that year at work and sustained permanent disabilities that were never compensated because, e.g., they worked for uncovered employers or they never filed claims. These workers, in effect, had replacement rates that were zero. If there were such workers, our replacement rates are higher to an unknown degree than the replacement rates for all workers who sustained permanent disabilities because of 1968 work injuries.

6. The data in tables 10.1-10.7 are six-year aggregates and thus are not appropriate for an adequacy test that compares a worker's actual earnings prior to the work-related injury with the worker's actual earnings subsequent to the injury. Many workers with minor permanent injuries experience most or all of their wage losses the first year or two after the injury and then their earnings resume their normal growth pattern. For example, suppose a worker earns $1000 in 1967 (the year before injury) and that his earnings would have increased $100 a year thereafter if he had not been injured. Assume that the worker has no earnings in 1968 and earns only $200 in 1969 as a result of the injury, but then his earnings rebound to $1300, $1400, $1500, and $1600 for 1970-73. This worker would show $1800 of earnings loss if his preinjury wages are compared with his postinjury actual earnings over a two-year period (1968-69) but no earnings losses if his preinjury wages are compared with his postinjury actual earnings over a six-year period (1968-73). Suppose the worker received $1200 of workers' compensation benefits (all paid in 1968 and 1969). This would produce a replacement rate of .67 if earnings losses and benefits are compared over a two-year period but an infinitely large replacement rate if earnings losses and benefits are compared over a six-year period.

The procedure we use to measure earnings losses and replacement rates is not as sensitive to the length of the period during which the adequacy and equity assessments are made. Using the example in the previous paragraph, we would show $1100 of earnings losses in 1968 and $1000 of earnings losses in 1969, and no earnings losses in subsequent years. Thus the dollar amount of earnings losses ($2100) and the replacement rate of .48 ($1000 of benefits divided by $2100 of earnings losses) would be the same whether calculations were done over 1968-69 or over 1968-73. (Proportional earnings losses would vary depending on whether a two- or six-year period were used, but this variable is not used in the adequacy and equity assessments.) Our estimates of replacement rates shown in tables 10.1-10.7 are deficient to the extent that benefit payments and earnings losses extend beyond the period for which we have data (1968-73); this point is discussed in this chapter.

7. As discussed in the text, the definition of vertical equity that requires a strict proportionality of benefits to losses is a special case. More generally, vertical equity only requires that there be a consistent relationship between losses and benefits. Ultimately, policy makers must decide what is a consistent relationship between losses and benefits. In general, little guidance has been provided by policy makers about their intentions for vertical equity. The use of minimum and maximum weekly benefits implies, however, that the desired policy is to replace a higher propor-

tion of lost earnings for low-wage workers than for high-wage workers. Also, the use in most states of maximum durations for benefits for serious permanent partial disabilities implies that the desired policy is to replace a higher proportion of lost earnings for workers with minor injuries than for workers with serious injuries. In California, however, workers with permanent disabilities rated at 70 percent or more of total disability are eligible for life pensions, which suggests that the intent is to replace a higher proportion of lost earnings for more serious injuries.

These examples suggest that it is difficult if not impossible to infer the definition of vertical equity that policy makers explicitly or implicitly intended when they established the various state workers' compensation programs. Absent the guidance about what policy makers intended, we will use two alternative definitions of vertical equity: first, the narrow test of vertical equity implied by the National Commission's definition of equitable, namely the requirement of a strict proportionality of benefits to losses; and second, when appropriate, a more general formulation of vertical equity, which assumes that, among workers who differ in terms of the severity of their work disabilities, the desired relationship between earnings losses and benefits is monotonic. That is, if workers with moderate work disabilities have a higher proportion of their lost earnings replaced by benefits than do workers with minor work disabilities, then workers with severe work disabilities should have at least as high a proportion of their lost earnings replaced by benefits as workers with moderate work disabilities. Thus, a state that replaced 20 percent of lost earnings for workers with minor work disabilities, 60 percent for workers with moderate work disabilities, and 40 percent for workers with severe work disabilities would violate the more general test of vertical equity.

8. Application of the equity test within a state largely involves an analysis of the cell-to-cell variations in the mean replacement rates in the various rows and columns of panel G in tables 10.1–10.7. When the source of this variability is related to the data in panels C and F of the tables, it is evident that the benefits in panel F show a much more regular pattern down columns and across rows than do the earnings losses in panel C, and that the irregularities in earnings losses are primarily responsible for the lack of regularity in the panel G values.

The conclusion that the source of variability in replacement rates is the erratic pattern of earnings losses must be used with some caution, however, since the result is in one sense a statistical artifact caused by the format of our tables. There are three variables reflected in tables 10.1 to 10.7: (1) the permanent disability rating explicitly or implicitly assigned by the workers' compensation program to each worker in our sample, (2) the total amount of workers' compensation benefits received by each worker, including temporary and permanent disability benefits, and (3) the earnings losses between 1968 and 1973 for each worker. In practice, the first two of these variables are highly correlated with each other across workers, while neither is highly correlated with the extent of earnings losses. Our tables use (1) disability ratings to establish the column intervals, and, not surprisingly, show that mean benefits (2) can be "predicted" reasonably well but that (3) mean earnings losses cannot. It would have been possible to construct tables that defined column intervals by the amount of earnings losses in each case; if panels C, F, and G of tables 10.1 to 10.7 had then been constructed using the same data, panel F (showing mean benefits) would have appeared erratic, panel C (showing mean earnings losses) would have shown a regular relationship across rows and down columns, and panel G (showing replacement rates) would have had the same values in the Total column as panel G in the present version of tables 10.1 to 10.7 and would have had values in other columns that demonstrated no pattern of regularity. This approach to a formatting of the tables might be considered evidence that the irregularity of the replacement rates can be traced back to erratic variations in benefits, rather than erratic variations in earnings losses.

We believe our approach to tabulation (using the size of the disability ratings to set the column intervals) is more appropriate than the alternative approach (using the extent of earnings losses to set column intervals) for at least two reasons. First, the research design virtually dictated this approach, since we wanted a sample of permanent disability cases in each state, not the universe of cases, and at the time the sample was drawn, we had information on the disability ratings but not the earnings losses. In other words, the only way to reduce our overall sample size by applying sampling fractions to certain cells was to rely upon information available from the agency tape records, which included no information on earnings losses. Second, the use of disability ratings as column headings implicitly reflects a model in which disability ratings are used to predict earnings losses, and that operationally is the way workers' compensation programs are designed. In other words, the disability ratings are assigned on a prospective basis before the actual loss of earnings occurs, and the ratings are *ex ante* predictions of lost earnings.

Although we believe our approach to tabulation is appropriate, we do not believe the crucial elements of our findings depend on it. Among workers who receive workers' compensation benefits, there are three variables with large standard deviations relative to their means: (1) disability ratings, (2) workers' compensation benefits, and (3) earnings losses. The values of the first two variables are closely correlated, and neither of them is closely correlated with the extent of wage loss. One way to demonstrate the lack of correspondence between benefits and earnings is reflected in our tables, to which the analysis in the text of the chapter now turns.

9. If the replacement rates were calculated for lifetime earnings losses and lifetime benefits, the replacement rates would probably be more similar across the disability rating categories. This result would be more consistent with the narrow test for vertical equity.

10. As discussed in chapter 10, each 1 percent of disability rating is associated with $741 of earnings losses in Wisconsin and $396 in Florida.

11. The recent conversion of Wisconsin from ratings for nonscheduled permanent partial disabilities based on extent of impairment to ratings based on loss of earning capacity (discussed in chapter 7) is not a propitious development in our view.

12. As discussed above, a broadly defined test of efficiency requires that the delivery system should provide adequate and efficient cash benefits without impeding other objectives of workers' compensation. By such a test, in addition to the high costs of litigation, another deficiency of the delivery system approach described in the text that relies on extensive litigation is the interference with the rehabilitation process that is caused by a litigious environment.

Chapter 12
Possible Reforms of Permanent Partial Disability Benefits

The preceding chapter characterized permanent partial disability benefits in the jurisdictions we examined as generally adequate, seriously inequitable, and apparently provided with great variations in efficiency among the jurisdictions. The judgments of adequacy, equity, and, to a lesser extent, efficiency are based on the data from our wage-loss study of California, Florida, and Wisconsin. The judgments of efficiency and, to a lesser extent, equity are based on the evidence from the 10-state study.

The question to be considered in this chapter is, given the deficiencies in the current handling of permanent partial disability benefits, what are the policy alternatives that should be considered in the quest for benefits that are adequate, equitable, and efficiently provided?

Issues in Designing a Program

Each jurisdiction must resolve a number of issues when a program for permanent partial disability benefits is designed or revised. Resolution of these issues is difficult because the criteria of adequacy, equity, and efficiency on which the decisions must rest often come into conflict.

Complicating the decisionmaking process is that efficiency has two meanings: myopic efficiency—in which the only concern is the reduction of administrative cost without regard to the quality of the program, and panoramic efficiency—in which the goal is the lowering of administrative cost without reducing the program's quality. (Chapter 2 provides an extended discussion of these concepts.)

Given the inadequate level of workers' compensation benefits in many jurisdictions and the extensive reliance on litigation, policy makers sometimes face policy options in which a change in administrative procedures will reduce the program's administrative cost without undermining adequacy or equity—thus achieving both myopic and panoramic efficiency.

Policy makers nonetheless will often face choices in which the only way to cut administrative cost is to reduce the quality of benefits. Such a choice has lower administrative costs and thus higher myopic efficiency, but the lower quality of benefits may reduce panoramic efficiency.

Equity is the aspect of the quality of benefits that seems most likely to deteriorate as myopic efficiency is increased (by reducing administrative costs). Several examples of the myopic efficiency-equity trade-off will be offered in this section.

One useful way to array policy makers' alternatives is to pose a series of questions that must be resolved in designing a program providing permanent partial disability benefits.

1. Which Consequence (or Consequences) of Injuries and Diseases Should Be Compensated? As catalogued in chart 1.2 and discussed in chapter 1, there are several consequences of injuries and diseases, including impairment, functional limitations, work disability, and nonwork disability. Some of these consequences can be further divided; work disability, for example, can be subdivided into loss of earning capacity and loss of actual earnings. Policy makers must decide which of these consequences warrant compensation.

Chapter 2 examined some opinions on this question. Larson argues that the sole basis for workers' compensation benefits should be work disability. In contrast, the National Commission concluded that, although work disability should be the primary basis for benefits, there is a secondary role for impairment. (As explained in chapter 2, *impairment* as used by the National Commission is broad enough to include *functional limitations* and *nonwork disability* as those terms are used in this report.)

Most state workers' compensation programs have never explicitly decided which consequences should be compensable, and the implicit decisions reflected in their statutes, regulations, and practices are often ambiguous or conflicting. Obviously, workers' compensation programs can survive without directly answering the question about the purpose of the benefits, but the failure to do so is one source of problems. Moreover, explicitly deciding the purpose of the benefits will make it easier to answer the balance of the questions that must be resolved in designing policy.

2. Which Consequence (or Consequences) of Injuries and Diseases Should Operationally Be Made the Basis for Benefits? Question 1 was concerned with the underlying purpose for benefits: that is, which consequences warrant compensation. Once that question has been answered, it must be decided whether the consequences that warrant compensation should be compensated directly or indirectly. To compensate indirectly means to make one consequence the operational basis for benefits because it serves as a convenient proxy for another consequence.

Assume, for example, that the first question is resolved with a decision to compensate work disability. The second question requires deciding whether work disability should be compensated directly or indirectly (by, for instance, relating benefits to the extent of impairment). The answer to this question is important, because the incentives built into the program depend upon what is operationally the basis for benefits. If benefits are linked to the extent of impairment, then workers have an incentive to exaggerate the extent of their impairments, and employers and carriers have an incentive to reduce those impairments. On the other hand, linking benefits to the extent of work disability encourages employees to exaggerate the extent of disability and employers and carriers to reduce the residual work disability experienced by workers. This incentive may encourage employers to provide vocational rehabilitation services and reemploy the workers, since these actions should reduce the extent of disability.

The decision about what operationally is made the basis for benefits starkly poses the trade-off between equity and low administrative costs (myopic efficiency). Suppose the answer to the first question is that the underlying purpose of benefits is to compensate workers for their actual loss of earnings. Operationally, this could either be done directly, by compensating the actual loss of earnings, or indirectly, using one of three other measures as a proxy for or approximate estimate of the actual loss of earnings: loss of wage-earning capacity, functional limitations, or impairment. Probably the least expensive strategy is to base benefits on impairment. (The use in workers' compensation programs of schedules that purport to pay benefits because of work disability can be understood as an attempt to obtain efficiency.) But benefits determined in this way are likely to be inequitable.

Probably the most equitable operational basis for benefits, assuming the purpose of the benefits is to compensate for actual loss of earnings, is actual earnings losses. But a wage-loss system that pays benefits for

an extended period of time as actual wage losses develop requires considerable resources. Case files must be maintained for long periods, an estimate must be made of the worker's potential earnings (what he would have earned had he not been injured), and the source of the worker's earnings losses must be determined when actual earnings are less than the estimated potential earnings. If the estimate of a worker's potential earnings is to be realistic, the estimating procedure must recognize the complex relationship between earnings and factors such as the worker's age, education, and labor market experience. Also, as suggested in chapter 1, the causes of wage loss are complex and numerous. No one seriously proposes that every worker whose postinjury earnings fall below his estimated potential earnings (or even below his preinjury earnings) should receive benefits. The immense problems of administering the pure wage-loss system have not, to our knowledge, been successfully solved in any jurisdiction. In Michigan, cited with favor by the National Commission, the wage-loss system appears to work only because many workers sign redemption agreements that end their eligibility for subsequent wage-loss benefits. The same problem of premature termination of eligibility for wage-loss benefits is emerging in Florida under the guise of washouts, as discussed in chapter 9.

The premature closing of potential wage-loss claims may not be an inevitable consequence of a wage-loss system,[1] but the evidence from our 10-state study indicates that workers, employers, and carriers are strongly averse to the long-term risks inherent in a pure wage-loss system.[2] If these risks are accepted and eligibility for wage-loss benefits is provided for an extended duration after the injury occurs, the administrative costs will be high—which will discourage states solely concerned with myopic efficiency. Even so, because the potential gains in equity appear to be substantial, the administrative costs may be justifiable in terms of panoramic efficiency.[3]

3. If More Than One Consequence of Injuries and Diseases is Compensable, Should There Be Multiple Benefits? If more than one of the consequences of work-related injuries and diseases warrant compensation, then policy makers must decide if there should be one type of benefit that attempts to compensate two or more consequences, or whether there should be multiple benefits.

Suppose that both impairment and work disability are judged to warrant compensation. One operational approach would base benefits solely on impairment; this means that the benefits would be designed to com-

pensate impairment directly and to compensate impairment as a proxy for work disability. This approach would be a relatively inexpensive way to provide benefits for both impairment and work disability, but appears to be unlikely to meet the equity criteria insofar as compensating work disability is concerned. The problems inherent in the use of one benefit to compensate two consequences, and the virtues of a dual benefit system, were discussed by the National Commission.

> We believe that the primary basis for workmen's compensation benefits should be the worker's loss of wages. We also believe that limited payments for permanent impairments are appropriate. A major difficulty with present permanent partial benefit provisions is that most seem to use one formula which bases benefits on both the impairment and disability bases. Combining both bases into one formula appears unworkable.
>
> Consideration should be given to the use of two types of benefits:
>
> *permanent partial impairment benefits*, paid to a worker solely because of a work-related impairment
>
> *permanent partial disability benefits*, paid to a worker because he has both a work-related impairment and a resultant disability.
>
> A worker might be eligible for both types of benefits. The impairment benefits would be based on the worker's impairment relative to the whole man. If, for example, the whole man was defined as 400 weeks, and . . . a worker was 50 percent impaired, then he would be eligible for 200 weeks of benefits.
>
> Impairment benefits are justified because of losses an impaired worker experiences that are unrelated to lost remuneration. . . . Since impairment benefits have no relationship to wage loss, there would be no necessity to link the value of the weekly benefits to the worker's own weekly wage; the weekly benefit could be the same amount for all workers in the State.
>
> In contrast, the disability benefits could be based on actual wage loss or loss in wage-earning capacity. (National Commission 1972, pp. 68-69)

More than two consequences of injuries and diseases may be considered worthy of compensation, and a benefit scheme could be designed accordingly. For example, a "modest proposal" for reform might include three types of benefits: (1) Type A benefits, based on the extent of the worker's impairment; (2) Type B benefits, based on the loss of wage-earning capacity (Type B benefits could be calculated by using the impairment ratings from the Type A benefits and modifying the ratings by factors such as age and education); and (3) Type C benefits, paid in the event of continuing wage loss after the Type B benefits expire. A worker might be eligible for all three types of benefits. The rationale for the threefold approach to benefits is that the Type A and Type B benefits compensate workers for impairment and work disability with relatively low administrative expenses, while the Type C benefits provide a safety valve when the Type B benefits result in highly inequitable benefits for a worker whose actual wage loss far exceeds the amount expected on the basis of injury, age, and education.

4. What Standard Should Be Used to Evaluate Cases? Answers to questions 2 and 3 determine which consequences will be operationally important for determining permanent partial benefits. The next question concerns the standards to be used in evaluating these consequences.

Impairments are likely to be an operationally important basis for benefits in a workers' compensation program, whether or not they are serving as a proxy for something else. One device used in almost every jurisdiction to rate some impairments is the schedule. The inclusion of scheduled injuries in a statute presumably reflects a desire for myopic efficiency.[4] But schedules have been subject to criticism in recent years. The National Commission argued that although schedules may cut corners, those currently (in 1972) in use included only a fraction of "medically identifiable permanent impairments" and typically had gone unrevised for years despite major medical advances (National Commission 1972, p. 69). To these drawbacks of schedules, we would add that their application in various states shows great inconsistency (see chapter 5).

If schedules were expunged from workers' compensation statutes, what would be used in their place? One alternative would be to allow the jurisdiction's workers' compensation agency to adopt a comprehensive set of guidelines that could be used to evaluate a large variety of impairments, not just the limited number appearing in the typical schedule. One possible set of guidelines is the AMA *Guides to the*

Evaluation of Permanent Impairment. California is an example of a state that has not included a list of scheduled injuries in its statute, but rather has relied on a comprehensive set of guidelines for evaluating the consequences of injuries or disease.

Both the California approach and the AMA *Guides* go beyond the rating of impairments and also provide standards for rating functional limitations, as those terms are defined in chapter 1. Assuming that states that decide to use impairments as an operational basis for benefits also intend to use functional limitations for the same purpose, it should be noted that the AMA *Guides* approach and the California approach to rating differ significantly. The AMA *Guides* confine the ratings almost exclusively to impairments and objective manifestations of functional limitations. California's guidelines allow, in addition, consideration of subjective manifestations of functional limitations, such as pain and lack of endurance. For the policy maker, the difference between the AMA approach and the California approach can be posed as a choice between myopic efficiency and equity. Abandonment of the current California schedule in favor of the AMA approach could be viewed as a sacrifice of equity (since the argument is made that the subjective manifestations can provide useful guidance concerning the seriousness of the consequences of the injury) for lower administrative costs. The policy maker is again faced with alternatives that reflect conflicting values.

The California schedule can illustrate another of the choices that has to be made in deciding what standards should be used to evaluate consequences. The purpose of the California schedule is to provide an estimate of the loss of earning capacity that a worker experiences because of an injury or disease. The rating of the impairment (or functional limitation) is combined with information on the worker's age and occupation to provide an estimate of the loss of earning capacity.[5] This is a relatively inexpensive way to estimate the loss of earning capacity compared to the procedure used in some states to evaluate "unscheduled" permanent partial injuries. As indicated in chapter 7, the factors considered in some states to evaluate unscheduled injuries are quite extensive: the worker's injury, age, occupation, experience, and the state of the labor market, for example. Since these factors are complex and must be applied on a case-by-case basis, considerable discretion arises in the application of these provisions. Exercise of that discretion invites the use of lawyers, referees, and claims managers, among others, which makes the resolution of many unscheduled injury cases an expensive process. The result may be greater equity than that obtained by using the Califor-

nia approach, but also more expense. The myopic efficiency-equity tradeoff is again posed.[6]

5. Who Should Apply the Standards? After a jurisdiction decides such questions as which consequences shall be compensable and what standards shall be used to evaluate these consequences, a decision must be made about who shall be given the authority to apply the standards in individual cases.

Employers (and carriers) could be given primary responsibility to evaluate their own employees and compensate them on the basis of the seriousness of the consequences of their injuries and diseases. Until about 20 years ago, California had a procedure known as "self-rating" that was used by employers to evaluate some workers, with little review of the determinations by the workers' compensation agency. Although such an approach is probably the least expensive way to apply workers' compensation standards, most jurisdictions have not followed it, probably because of a concern about the equity and adequacy of the benefits that would result.

Another approach would assign primary responsibility for the application of the standards to employers (and carriers) and to plaintiffs' attorneys, with involvement by the state agency only when the private parties cannot reach a settlement of their own. This approach, exemplified by Florida before 1979 and by California today, reduces the need for an active state agency. When the costs of administering the program are defined to include attorneys' fees, however, the approach is not inexpensive. Data on the operation of the programs in Florida and California presented in part III indicate that benefits are relatively adequate but highly inequitable. Thus the approach that relies on the parties negotiating their own settlements appears to lack panoramic efficiency: administrative costs (including attorneys' fees) probably could be lowered without reducing the adequacy and equity of the benefits.

Another approach to the application of standards would assign primary responsibility to the state workers' compensation agency, which would closely monitor the decisions made by the private parties, or even evaluate the extent of disability in each case, subject to a review of the exercise of its discretion by appeals to the court system. This approach is consistent with the National Commission's view that the "key to an effective delivery system is the agency's active pursuit of the administrative obligations" (National Commission 1972, p. 101). The resources devoted to administering the system are probably no greater

in this approach than if employers (and carriers) were given primary authority for applying the standards, but the result of active agency participation should be greater equity of benefits. Wisconsin has an active state agency—stressing record keeping, monitoring, and evaluation—and our results suggest the active agency approach provides more panoramic efficiency because the quality of the benefits is superior. (Chapter 4 discusses the various administrative tasks performed by state workers' compensation agencies.)

The three approaches just described—primary reliance on employers (and carriers); primary reliance on negotiations between the private parties; and primary reliance on the state agency—are models that represent the outer limits of what states can do. Most states, in practice, use a mixture of these approaches. California, for example, places primary reliance on the state agency to determine the benefits for one type of permanent partial disability benefits ("voluntary" benefits, based on informal ratings from the Disability Evaluation Bureau), while the private parties largely determine the benefits for another type of permanent partial disability benefits (compromise and release settlements, which are generally accepted by the state agency with minimal supervision).

6. What Meaning Shall Be Given to the Criteria of Adequacy, Equity, and Efficiency, Especially When the Criteria Come into Conflict? In order to answer the previous questions, and to resolve the other issues that arise in designing a program to provide permanent partial disability benefits, policy makers must decide what interpretations should be given to the criteria of adequacy, equity, and efficiency, and how conflicts among these criteria should be resolved. Answers to these questions are, to a large extent, value judgments; there are no "right" answers.

The adequacy criterion requires policy makers to decide which consequences of injuries and diseases should be compensable, and what proportion of the losses should be replaced. The National Commission concluded that a substantial proportion of lost income (work disability) should be replaced by workers' compensation benefits, and that a limited amount of benefits for impairment should also be provided.[7] The National Commission distinguished workers' compensation from other social insurance programs as to the proportion of lost income to be replaced by benefits. The reason for higher benefits in workers' compensation is that "in exchange for the benefits of workmen's compensation, workers renounced their right to seek redress for economic damages

and pain and suffering under the common law. In no other social insurance program such as Social Security or unemployment compensation, did workers surrender any right of value in exchange for benefits'' (National Commission 1972, p. 37).

It is clear that the National Commission's reasoning would justify workers' compensation benefits much higher than the benefits in other social insurance programs, which is a result some policy makers may find unacceptable.[8] It is also clear that if workers' compensation were abolished and employees were allowed to sue their employers under current doctrines of liability, the workers' compensation benefits recommended by the National Commission would appear trifling compared to the damages awarded to plaintiffs when the employers were held liable for damages. (Whether, on the average, injured workers would fare better under liability suits as opposed to the workers' compensation benefits recommended by the National Commission is unclear, since many workers eligible for workers' compensation benefits could not prevail in court suits. Even if workers would do better on average by relying on liability suits, thus improving adequacy, the all-or-nothing element of the approach would aggravate the problem of equity.)

As indicated earlier, the trade-off between equity and administrative costs is likely to appear when a decision has been made that the underlying basis for benefits should be work disability, and a choice must be made of an operational basis for the benefits. At one extreme, using impairment as a proxy for work disability is inexpensive but likely to be inequitable. At the other extreme, using actual wage loss as a basis for the work-disability benefits is likely to be more equitable but expensive, thus reducing myopic efficiency.

What is the right mixture of equity and myopic efficiency under these circumstances? Support for an emphasis on equity can be found in the National Commission's discussion of permanent partial benefits. The Michigan approach was described as paying benefits on the basis of actual wage loss as it develops over an extended period, and praised because the method ''has the substantial merit of matching benefits to a worker's actual loss of wages, rather than basing benefits on guesses about future wage loss'' (National Commission 1972, p. 69).

There are arguments to counter the National Commission's devotion to equity, however. For one thing, the Commission's description of the Michigan approach seems rather naive. As discussed in chapter 8,

the practice in Michigan deviates substantially from the theory. Another reason for accepting imperfect equity was stated by Berkowitz (1975):[9]

> One goal of workers' compensation . . . is prompt and certain payment of compensation due the worker. Given such a goal, we should expect to sacrifice some equity. As the Bradley Commission Report put it, "Social insurance relies on the 'magic of averages' to arrive at an overall equity in social justice. This means inescapably that one individual may get somewhat more and another somewhat less than precise individual justice would indicate."

This section has posed six questions that must be answered explicitly or implicitly in the design of a program that provides permanent partial disability benefits. Answers to these questions will determine the extent of adequacy, equity, and efficiency of a state's program. In some instances, proper answers will enable a state to improve its program on one of these criteria without reducing its accomplishments on the other criteria. In other instances, a state will have to sacrifice its accomplishments on one criterion in order to improve on another: the decision on the proper trade-off is essentially a value judgment for which there is no right answer. In this section we have tried to avoid imposing our value judgments.

In the next section we will present some policy prescriptions that reflect, among other things, our views on the proper trade-offs among adequacy, equity, and efficiency.

Evaluation of Policy Alternatives

This section provides our answers to the six questions and discusses other matters.

The Compensable Consequences of Injuries and Diseases

We accept the view that work disability should be the primary basis for permanent partial disability benefits, and that there is also a legitimate secondary role for compensation based solely on impairment. Even when there is no possibility that a permanent impairment will result in the loss of wage-earning capacity or actual earnings losses, it should not be ignored in the design of a workers' compensation program. We are not as concerned about whether the benefits are considered a payment for the impairment per se or a payment for the function limitations and

non-work disability that are likely to flow from the impairment, because we believe either view of the impairment represents a justifiable basis for benefits.

Like most commentators who argue there is some role for compensation for impairment, we view the role as secondary to compensation for the worker's loss of earning capacity or loss of actual earnings. The argument that workers can receive benefits even when their employers are not at fault justifies some limitations on the amount of compensation for impairments per se, functional limitations, and nonwork disability. Thus, most of the permanent partial disability benefits should be directed to the compensation of work disability.

The Operational Basis for Work Disability Benefits. We will review the advantages and disadvantages of three approaches to operationalizing work disability benefits, and then will offer a hybrid approach that we believe is desirable.

Work disability criterion I (WDI): a comprehensive schedule of impairments and functional limitations. A comprehensive schedule of impairments and functional limitations, such as the American Medical Association's *Guides to the Evaluation of Permanent Impairment*, could be used to rate the permanent consequences of every work-related injury and disease, and the rating could serve as the basis for permanent partial disability benefits designed to compensate for work disability. Obviously, in this approach, impairments and functional limitations are a proxy for work disability. Although rating systems other than the AMA *Guides* can be used, the *Guides* represent probably the epitome of the search for consistency in ratings, since they are comprehensive and place little reliance on subjective factors, such as residual pain, over which raters are more likely to disagree.

The primary advantage of the WDI criterion is that it greatly limits the rater's opportunity to exercise discretion, which means less opportunity for litigation. In our terms, this approach probably would result in the greatest efficiency in the narrow sense of minimizing administrative costs. There are, however, a number of disadvantages to the WDI criterion. If the primary purpose of permanent partial benefits is to compensate for work disability, then this approach has serious problems, because our evidence from the wage-loss study indicates that similar or identical impairments result in quite disparate earnings losses. Furthermore, our field work in the 10-state study leads us to believe that it is unrealistic to expect the participants to look only at "objective"

factors (such as amputation or total loss of use of a bodily member) when determining the extent of impairment or functional limitations, and equally unrealistic to think that only impairments and functional limitations will be considered in making ratings, and not matters such as age, occupation, and the likely prospects for reemployment—even when these factors are not included in the state's rating system. As a result, much of the purported gain in efficiency for a "pure" impairment rating system is illusory. Apparently the basic reason is that the parties rebel at the rating that would be produced if the only factors that could be considered were objective evidence of the extent of impairment and functional limitations.

One way to modify the WDI criterion would be to explicitly incorporate certain objective factors, such as the worker's age, education, and amount of work experience, along with the rating of the worker's impairment, into a formula that produces an estimate of the worker's loss of wage-earning capacity. This can be considered a scheduled assessment of the loss of earning capacity. This operational criterion for work disability benefits (labeled the WDIa approach) is similar to the California rating system. As envisaged here, however, the formula would use age, education, and work experience rather than age and occupation as factors to modify the "standard rating" of impairment or functional limitations. We also would have the standard rating based on objective factors associated with the impairment or functional limitation, and not on subjective factors, as in California. WDIa-type benefits are likely to do a better job than WDI-type benefits in predicting the amount of earnings losses that workers will experience, but our California results suggest that the predictions will still be seriously wrong in many cases.

Work disability criterion II (WDII): nonscheduled assessment of loss of earning capacity. A second basic approach to the quest for operational criteria for work disability benefits is to assess the loss of earning capacity on the basis of the facts in each case. This is essentially the approach used now in many states to rate nonscheduled injuries, as described in chapter 7. Statutes provide that for those injuries not included in the schedule, the extent of disability shall be determined on the basis of the worker's loss of earning capacity. The statutes sometimes list factors to be considered, such as the extent of the worker's impairment, his age, his ability to compete in the open labor market, and so on. The main purported advantage of this loss of earning capacity approach is the ability to consider much more information about the worker than can be considered in the WDI or WDIa approaches. But

we do not believe that accurate predictions can be made about the extent of earnings losses a worker will experience on the basis of this information when the judgments are made on an *ex ante* basis. The relationships among type and severity of injury, age, sex, education, prior work experience, motivation, and other factors are so complex that meaningful predictions about how particular workers will fare in the labor market are often impossible. As a result, we think that the added information that can be incorporated into the loss of earning capacity approach where each case considers all the relevant facts is not very helpful. The disadvantage of the approach is that disagreements are almost inevitable about the impact of these various factors, and as a result litigation is virtually invited. The end result is an approach that is expensive to administer and produces little equity in the sense of matching wage loss and workers' compensation benefits. We conclude that the approach that assesses the loss of earning capacity on the basis of the facts in the particular case is the worst possible solution to the quest for operational criteria to compensate work disability. We pronounce this harsh judgment cognizant that this is the approach used in most jurisdictions for rating nonscheduled permanent partial disability cases.

Work disability criterion III (WDIII): "pure" wage-loss. A "pure" wage-loss approach is another possible operational criterion for work disability benefits. The essence of this approach is that the worker's actual earnings after his injury are monitored and a proportion of the difference between these actual earnings and an estimate of his potential earnings had he not been injured are paid as workers' compensation benefits. Benefits are paid retroactively as the worker experiences wage loss that can be attributed to the work-related injury or disease. The "pure" wage-loss approach would keep cases open until retirement age. To protect the right to file claims during this extended period, compromise and release agreements would be prohibited.

The greatest potential advantage of the "pure" wage-loss approach is that it improves the chances of matching permanent partial disability benefits with actual wage loss. In our terms, this closer correspondence between benefits and wage loss would represent an improement in the quity of the benefits. It must be stressed, however, that the search for equity in the wage-loss approach must face pitfalls. Although the preceding paragraph provided the essence of the wage-loss approach, the operational version in invariably more complicated. In the normal approach to wage-loss benefits (described in chapter 8), the amount of compensable wage loss is the difference between the postinjury poten-

tial earnings the worker would have been able to earn but for the injury and the greater of (1) postinjury actual earnings or (2) postinjury potential earnings in light of the worker's injury. As discussed in chapter 9, Florida does not compare (1) and (2), but nonetheless does not always accept postinjury actual earnings at face value; the wage-loss approach there must somehow sort out the incidents of wage loss due to the work-related injury from those due to other causes.

Determining what a worker would have been able to earn but for a work-related injury is also a difficult task, particularly if the law does not just mechanically equate postinjury potential earnings with preinjury actual earnings. The problem of estimating postinjury potential earnings is especially difficult for workers who are very young or very old or female. Younger workers are more likely to be working less than full time because of their attendance in school, and older workers are likely to retire. Historically, women have been more likely than men to have intermittent spells of withdrawal from the labor force, and although the differences have been narrowing substantially in recent years, nonetheless the stability of employment is still higher for men than for women. For these groups of workers—the young, the old, and women—predictions of postinjury potential earnings are especially challenging. In some instances, extrapolation into the postinjury period on the basis of the worker's earnings before injury will exaggerate the earnings the worker would have earned if he or she had never been injured. For example, a worker who was working full time up to the date of injury may have been on the verge of retiring or returning to school. In other instances, extrapolation on the basis of the preinjury earnings may underpredict the potential earnings that a worker would have earned if he or she had not been injured. This might occur, for example, for a student who had been working part time prior to the injury and was on the verge of entering the labor force on a full-time basis, or for a woman who had temporarily left the labor force to raise children and who experienced a work-related injury just as she was beginning to phase back to a full-time job.

Because of these complications in determining the extent of wage loss associated with a particular work-related injury or disease, the wage-loss approach may fail to match benefits with wage loss, and thus may fail to achieve the goal of equity.[10] The complications also mean the wage-loss approach can be relatively expensive to administer. If, for example, any worker were eligible for benefits who had even a slight deficiency in actual earnings after his injury compared to the estimate

of his potential earnings, many cases could qualify for benefits, since even without the impact of injuries there are considerable variations in wages that would trigger the benefit system. Another concern is that the wage-loss system can provide undesirable disincentives to work. The disincentive occurs because the greater the wage loss, the higher the benefits. The rational response of workers to incentives to limit their labor supply and thus increase their benefits is an especially acute problem for workers who are still recovering from their work-related injury and in the process of rehabilitation when they need every incentive to regain their confidence and productive skills.[11]

Another aspect of the wage-loss system that must be considered is the general aversion to the approach shown by workers, employers, and carriers. As discussed in our 10-state study, the experience in states such as Michigan, Ohio, and Florida suggests that the parties are not enamored with a system that prolongs the period during which there is uncertainty about the amount of benefits to be paid. A course commonly followed to avert the uncertainty is to terminate prematurely the potential eligibility for wage-loss benefits through devices such as compromise and release agreements. Thus a wage-loss system, if it is going to provide benefits for the entire duration of the loss of earnings, will require careful monitoring by the state agency to keep the parties from opting out of the system.

It is possible to think of modifications that can blunt some of the criticisms of a pure wage-loss approach. For example, a delay between the date that the worker is considered to have reached maximum medical improvement and the date when the wage-loss benefits begin would allow the rehabilitation process to proceed without the work disincentives operating at the critical stages of rehabilitation. It must be recognized, however, that such a lag would be indefensible if no other benefits were being paid during that period.

Another modification that would improve the efficiency of the wage-loss approach is a requirement that a nontrivial minimum level of earnings losses must be experienced before a worker is eligible for wage-loss benefits. For example, a wage loss of only 10 or 20 percent of the estimated potential earnings might be considered an amount likely to have been caused by factors other than the work-related injury and thus would not establish eligibility for benefits. Such a threshold for eligibility would substantially reduce the number of cases that could receive benefits if a pure wage-loss system were adopted.[12] (A more

detailed example of a system with a threshold limit of losses is described below.)

Work Disability Criterion: A Hybrid Approach. We have described three approaches to operational bases for work disability benefits: a comprehensive schedule of impairments (WDI), a nonscheduled assessment of loss of earning capacity (WDII), and a "pure" wage-loss approach (WDIII). Each approach has some merits and disadvantages, although we can see little of merit in the WDII approach despite its general use in most states. We believe the best solution combines elements of the WDI and WDIII approaches. These two approaches can be combined in a number of ways, as the balance of this subsection indicates.

Our hybrid approach begins with a period of *presumed disability benefits* that commence as soon as the worker's permanent condition is rated. The amount and duration of the benefits do not depend on demonstration of actual loss of earnings. The worker is rated on the severity of his impairment and functional limitations based on a comprehensive set of guidelines issued by the state workers' compensation agency. These guidelines should emphasize objective factors for rating (such as loss of motion) and minimize the use of subjective factors (such as loss of endurance). The obvious example of the rating guidelines we have in mind is the American Medical Association's *Guides to the Evaluation of Permanent Impairment.* These guidelines cover all types of injuries and thus eliminate the distinction between scheduled and nonscheduled injuries. We think there is no convincing reason to maintain the conventional distinction between scheduled and nonscheduled injuries. Also, we would not draw a distinction between permanent partial disability and permanent total disability: the same set of guidelines should be used to evaluate all degrees of permanent disability between 1 percent and 100 percent.

The evaluation of the seriousness of the worker's impairment or functional limitations produces a standard rating that varies between 1 percent and 100 percent. (The benefits are intended only for a worker with at least a minimal permanent impairment.) Although the standard rating could be used without modification, an acceptable alternative approach would modify the rating on the basis of objective information such as the worker's age, level of education, and years of work experience. These factors are used to provide an approximation of the influence of personal characteristics on a worker's labor market experience, given the seriousness of the injury. The factors would be incorporated by use

of a formula, such as the one used in California, and their influence on the standard rating would not vary from case to case because of an assessment by the administrative law judge about their likely impact for particular workers. The formula incorporating the adjustment factors would be designed so that *on average* the standard ratings would translate into the same level of modified ratings. In short, the modification factors would be as likely to increase as to decrease the standard rating.

Once the modified rating (or standard rating, if the jurisdiction decides not to incorporate other factors into a formula) is determined, the amount and duration of the presumed disability benefits depend on the size of the modified rating (for example, each 1 percent of rating might result in four weeks of benefits). The weekly benefit could be 66 2/3 percent of the worker's preinjury wage, subject to a maximum benefit of 100 percent of the state's average weekly wage. An alternative approach that we prefer pays the initial benefits for a fixed duration for all cases (for example, six months), with the amount of the weekly benefit varying as a function of the size of the modified rating. Thus a 5 percent rating would produce six months of benefits, with the weekly benefit equal to 5 percent of the worker's preinjury wage, subject to a maximum benefit of 100 percent of the state's average weekly wage. It may be that a fixed duration of longer than six months for the presumed wage-loss benefits would be desirable. An important principle is that these presumed disability benefits are paid without requiring the worker to demonstrate any actual loss of earnings, and it is important that the period of presumed disability benefits be long enough for most workers to recover their strength and earning capacity so that they are unlikely to be experiencing actual wage loss by the end of the period.

The weekly benefit amounts just described are meant to illustrate how the approach operates: the appropriate amounts for a particular state are a consequence of several matters, including the generosity of the rating system used to evaluate the impairments and functional limitations. The AMA *Guides* are relatively strict compared to the rating standards used in most states, and if the AMA *Guides* are used, then the weekly benefit amounts for each 1 percent of rating can be relatively large. The proper combinations of weekly benefit amount, duration of benefits, and rating system must be worked out on a state-by-state basis. As a rough guide to the desired combination, we believe that the benefits produced by the presumed disability benefits provisions should be no more than the amounts currently paid in most states under their present

permanent partial disability benefit provisions (and perhaps should be even less), because in our scheme these presumed disability benefits can be followed by a second type of benefit for many workers.

In our scheme, the second type of benefits are *modified wage-loss benefits*. Table 12.1 provides information on a number of aspects of a wage-loss program that must be considered by policy makers, and indicates two types of modified wage-loss benefits. The extensive type represents the most developed form of wage-loss benefits that we can envisage a state adopting. Because so little is known about the operation of wage-loss benefits, however, we also indicate how a number of aspects of wage-loss benefits could be handled in a more limited fashion.

The wage-loss benefits described in table 12.1 are designed to complement the presumed disability benefits of the type just described that begin on the date of MMI and continue for six months, with the weekly amount of benefits varying in proportion to the worker's permanent disability rating. Because of the general lack of experience with wage-loss benefits, a state initially may want to restrict the benefits to workers with ratings that are at least moderately serious. Aspect 1 in table 12.1 indicates that a limited type of wage-loss benefit might use an 11 percent permanent disability rating as a minimum level for eligibility for these benefits. (Workers with ratings of 10 percent or less will be receiving presumed disability benefits during the first six months after their injuries are rated.) The extensive type of wage-loss benefits is available to all workers with a permanent disability rating of 1 percent or greater.

The worker is first eligible for the wage-loss benefits at the end of the six months of presumed disability benefits under both our limited and extensive types of wage-loss benefits (aspect 2). Aspects 3-7 pertain to a method of calculating the amount of wage-loss benefits. The earnings shortfall is the difference between potential earnings and actual postinjury earnings (or postinjury earning capacity if that figure is greater than actual earnings). The earnings shortfall must exceed 20 percent of potential earnings before the worker is eligible for wage-loss benefits in the limited type of wage-loss benefits; the excess amount above the 20 percent threshold is defined as compensable wage loss. The wage-loss benefits are calculated as 80 percent of the compensable wage loss. One difference between the limited and extensive types of wage-loss benefits pertains to the threshold, which is only 10 percent of potential earnings in the extensive type. Another crucial difference

Table 12.1
Variations in Wage-Loss Benefits

	Aspect of benefits	Type of wage-loss benefits: Limited	Type of wage-loss benefits: Extensive
1.	Workers potentially eligible for wage-loss benefits	Workers with permanent disability ratings (PDR) over 10%	Workers with permanent disability ratings (PDR) of at least 1%
2.	Earliest date of eligibility (EDI)	Six months after date of maximum medical improvement	Same
3.	Potential earnings	Worker's preinjury earnings	Worker's preinjury earnings increased through time to reflect changes in wages or prices
4.	Earnings shortfall	Potential earnings minus greater of (1) worker's actual earnings after EDI or (2) worker's earning capacity after EDI	Same
5.	Threshold	20% of potential earnings	10% of potential earnings
6.	Compensable wage loss	Earnings shortfall minus threshold	Same
7.	Amount of wage-loss benefits	80% of compensable wage loss	Same
8.	How soon after EDI must earnings shortfall commence or eligibility ends	PDR 11–25% one year PDR 26–50% two years PDR 51–100% three years	PDR 1–10% one year PDR 11–25% two years PDR 26–50% three years PDR 51–100% five years
9.	Duration of break in shortfall that will cause eligibility to lapse to lapse	PDR 11–25% one year PDR 26–50% two years PDR 51–100% three years	PDR 1–10% one year PDR 11–25% two years PDR 26–50% three years PDR 51–100% five years

10	Maximum duration for benefits	350 weeks after EDI or until worker reaches normal retirement age, whichever is sooner	Until worker reaches normal retirement age
11	Burden of proof on whether earnings shortfall is work-related	PDR 11–50%, employee must show shortfall is work-related PDR 51–100%, employer must show shortfall is not work-related	PDR 1–40%, employee must show shortfall is work-related PDR 41–100%, employer must show shortfall is not work-related
12	Burden of proof on whether worker's earning capacity after EDI is greater than actual earnings	PDR 11–50%, employee must show actual earnings equal earning capacity PDR 51–100%, employer must show earning capacity is greater than actual earnings	PDR 1–40%, employee must show actual earnings equal earning capacity PDR 41–100%, employer must show earning capacity is greater than actual earnings
13	Compromise and release	Yes, if approved by appeals board as in best interests of worker	PDR 1–25%, yes if approved by appeals board as in best interests of worker PDR 26–100%, no
14	Rehabilitation requirements	Worker must accept rehabilitation approved by state agency or not eligible for benefits	Same
15	Financing of wage loss benefits	Employer responsible for all benefits	Employer responsible for first 350 weeks of benefits, special fund responsible thereafter

involves the calculation of potential earnings. In the limited type, the potential earnings are equal to the worker's preinjury earnings, whereas in the extensive type the potential earnings are the worker's preinjury earnings adjusted through time to reflect changes in the state's wages or prices. The most obvious adjustment method is to increase the worker's preinjury wages by the same percentage that the state's average weekly wage has increased between the year when the worker was injured and the year when the potential earnings are calculated.

To illustrate how the limited wage-loss benefits would be calculated, assume a worker is injured in 1987 when his preinjury earnings are $400 a week. In 1990 his actual earnings are $200 a week and he is eligible for wage-loss benefits. Then the worker's earnings shortfall is $400–$200=$200; the compensable wage loss is $200–(20 percent x $400)=$120; and the wage-loss benefit is 80 percent x $120=$96.

To illustrate the extensive wage-loss benefit, assume that the state's average wages increase 25 percent between 1987 and 1990. Then potential earnings for the worker are equal to 125 percent x $400=$500; the earnings shortfall is $500–$200=$300; the compensable wage loss is $300–(10 percent x $500)=$250; and the wage-loss benefit is 80 percent x $250=$200.

The purposes of the 20/80 formula in the limited wage-loss approach are several. A 20 percent earnings loss is a minimum requirement to warrant any benefits because we do not want the benefit payments to be triggered by the minor fluctuations of earnings that many workers experience for reasons having nothing to do with work-related injuries or diseases. But once the worker does have a substantial earnings loss, then a relatively high proportion (80 percent) of the loss should be replaced. For those jurisdictions that conclude the 20/80 formula is too parsimonious, the extensive type of wage-loss benefit provides an alternative formula, namely a 10 percent threshold of earnings loss and an 80 percent replacement rate above this figure. Burton (1983, pp. 41-46) argues that increasing the replacement rate above 80 percent is not an appropriate method to improve the generosity of the benefits because of the disincentives to return to work caused by an excessive replacement rate.

Several decisions must be made concerning the time limits within which workers much establish their eligibility for wage-loss benefits and the potential duration for the benefits. As a practical matter, the wage-loss system cannot be expected to provide compensation to a

worker whose initial earnings losses occur 25 or even 10 years after his work-related injury.[13] Aspect 8 suggests some time limits. For example, the limited type of wage-loss benefits could require a worker with a 51 to 100 percent permanent disability rating to experience earnings shortfall within three years after his earliest date of eligibility for wage-loss benefits or he cannot thereafter claim the benefits. The time by which initial eligibility must be established is extended for the more extensive type of wage-loss benefits. It will be necessary to include a provision in the state laws to protect employees against their employers maintaining them on the payroll until the eligibility period is over and then discharging or demoting them in an obvious ploy to avoid payment of wage-loss benefits.

Aspect 9 concerns the duration of employment at wages high enough to cause no earnings shortfall that will extinguish the continuing eligibility for the benefits for a worker who has qualified for the benefits. In the case of the limited type of wage-loss benefits, for example, a worker with a permanent disability rating of 11 to 25 percent who experiences a one-year period of employment at wages that produce no earnings shortfall will lose eligibility for additional benefits.

Another important aspect of wage-loss benefits is the maximum duration for the benefits. A limited type of wage-loss benefit could use a maximum of 350 weeks. Although this means that some workers will have their wage-loss benefits terminated after approximately seven years, which could cause severe hardship, nonetheless the hardship is probably much more severe under most current workers' compensation programs. Further, after some experience with a maximum duration of 350 weeks, a state would have enough information to decide whether to move to the unlimited duration that is a component of the extensive wage-loss benefits. For either the limited or extensive wage-loss benefits, however, eligibility for benefits would terminate at the worker's normal retirement age. That age would presumably be 65 for most workers (the age when they would be eligible for full Social Security benefits), but the age might be earlier or later if the worker or employer can demonstrate that the standard age for retirement in a particular industry or occupation is not 65. The provision concerning the maximum age for eligibility would have to be drawn carefully so that workers would not receive wage-loss benefits during their normal retirement years.[14]

Another aspect of wage-loss benefits concerns who has the burden of proof to establish whether an earnings shortfall is caused by the work-related injury or disease, or by other (noncompensable) reasons, such

as unemployment due to adverse economic conditions associated with a business cycle. For the limited type of wage-loss benefit, the employee must demonstrate that the shortfall is work-related if his permanent disability rating is from 11 to 50 percent, but the employer must show that the shortfall was *not* work-related if the permanent disability rating is greater than 50 percent (see aspect 11). For the extensive type of wage-loss benefits, the level of rating at which the burden of proof shifts from the employee to establish his eligibility to the employer to establish the lack of eligibility is lowered. Aspect 12 deals with the associated legal issue of the relationship between actual earnings in the postinjury period and postinjury earning capacity. For the limited type of wage-loss benefit, a worker with a permanent disability rating from 11 to 50 percent has the burden to show that actual earnings are equal to earning capacity (if actual earnings are found to be less than earning capacity, then the earnings shortfall is calculated as the difference between potential earnings and postinjury earning capacity); and the employer has the burden of proof to establish that earning capacity is greater than actual earnings if the employee has a permanent disability rating greater than 50 percent. The burden of proof shifts to the employer at a lower permanent disability rating in the case of the extensive type of benefits. In a case in which the employer has this burden and fails to establish that postinjury earning capacity exceeds postinjury actual earnings, the earnings shortfall is calculated as the difference between potential earnings and actual earnings. Aspects 11 and 12 will have to be carefully translated into legislation in light of the state's legal philosophy and the stringency of the permanent disability rating standards used in the workers' compensation program. The purpose is to allow employers to defend themselves against claims for wage-loss benefits based merely on the circumstance that the workers' actual earnings in the postinjury period are less than the workers' potential earnings. The difficult task, however, is to find statutory language that provides employers this protection without placing undue requirements on workers to demonstrate that their earnings losses are work-related. The Florida experience examined in chapter 9 indicates that this balancing of employer and employee interests is one of the most difficult tasks in a wage-loss system. Aspects 11 and 12 in table 12.1 may provide solutions that are too simplistic, but at least they make explicit certain critical legal issues that are implicit in any wage-loss approach but that are often given inadequate attention in drafting statutory language.

An essential part of the wage-loss approach is that earnings losses are assessed after they occur, and then benefits are paid on a retrospec-

tive basis. This approach obviously will not work if before the earnings losses occur the employee signs a compromise and release agreement waiving his right to any such benefits. At a minimum (aspect 13, table 12.1), a compromise and release agreement should be approved only if the appellate level of the state workers' compensation agency judges that it is in the best interest of the worker. An extensive type of wage-loss benefit could require such approval for workers with permanent disability ratings of 1 to 25 percent, and absolutely prohibit compromise and release agreements for more serious injuries.

One of the main advantages of the wage-loss approach is that employers have a strong incentive to reemploy and rehabilitate workers in order to reduce their potential liability for benefits. In order to complement this incentive for employers, the wage-loss benefit program should provide strong encouragement to workers to undergo rehabilitation. Our recommendation is that workers lose their eligibility for wage-loss benefits unless they accept rehabilitation services approved by the state workers' compensation agency (aspect 14, table 12.1). These services would be paid for by the employer, carrier, or state.

Finally, decisions must be made about the financing of wage-loss benefits. One reason for the strong pressure for compromise and release agreements and premature termination of eligibility for long-term benefits is employers' and carriers' concern about the uncertainty associated with long-term cases. We suggest that for a limited type of wage-loss benefits, in which the maximum duration is 350 weeks, the employer (or its carrier) can assume all of the financial liability for its own workers (aspect 15). On the other hand, for the extensive type of wage-loss benefits, in which payments can continue for decades, the employer (or its carrier) can be responsible for the initial phase of the benefits (for example, 350 weeks) and then liability for the continuation of the benefits is assigned to a special fund financed by assessments on carriers and employers.

It should be evident that the recommendations summarized in table 12.1 are not meant to be unalterable solutions. Each state must design its own wage-loss benefits in light of the economic and legal conditions in the state. Some of the elements from the Limited Benefits column in table 12.1 can be combined with some of the elements from the Extensive Benefits column in order to meet a state's particular needs.

It also should be stressed that a state that does not want to move immediately to permanent partial disability benefits reform as substantial

as that represented in the Limited Benefits column of table 12.1 can nonetheless begin to move toward a wage-loss approach. That is, smaller increments toward the wage-loss approach are feasible than even the limited wage-loss benefits envisaged in table 12.1. A state with a typical program for permanent partial disability benefits that incorporates scheduled and nonscheduled benefits can graft some elements of the wage-loss program onto its current system. For example, the state may change its law so that workers who receive a relatively high disability rating under their current state law (e.g., equivalent to 40 percent or more of total disability) could be eligible for wage-loss benefits after their benefits under the current state law expire. A high cutoff point in terms of the disability ratings would limit the potential claimants to a small number, so that the plan would not be very expensive or disruptive to the current state program. Thus, a worker who now receives permanent partial disability benefits for 150 weeks would become eligible for wage-loss benefits if he has continuing actual wage loss after the 150 weeks. The wage loss could be determined on the basis of the 20/80 formula summarized in table 12.1, and some of the other matters, such as burden of proof and the duration of wage-loss benefits, also could be resolved by using table 12.1 as a guide. This incremental approach to a wage-loss system would allow the state to monitor its own experience and determine how many workers have substantial continuing wage loss for long periods of time, and as evidence accumulates the state may decide to move further in the direction of the limited or extensive wage-loss benefits spelled out in table 12.1.

The Operational Basis for Impairment Benefits. The preceding discussion is concerned with several alternative operational bases for work disability benefits. If a state decides to compensate explicitly for impairment, an operational basis for this type of benefits must also be determined. We think the choice is clear: namely, the extent of impairment or functional limitation should be determined by use of comprehensive guidelines, such as the AMA *Guides*. Even if the purpose of the impairment benefits is to compensate for the subsequent consequence, nonwork disability, it is difficult to imagine an operational way to measure nonwork disability directly other than by an expensive and almost invariably arbitrary case-by-case analysis of each worker's life style and how it was affected by his work-related injury or disease. As a practical matter, the only feasible approach is to measure the impairment and functional limitations and use the rating as a proxy for nonwork disability.

Each worker with a permanent disability rating of 1 percent or more could receive impairment benefits. Since these benefits are not designed to compensate for work disability, there is no reason to relate the amount of the benefits to the level of preinjury earnings. Rather we would use the same amount of benefits per percent of disability for all workers. A simple formula would give each worker $200 for each 1 percent of his standard rating; thus a 15 percent rating would result in $3000 of impairment benefits. A more complex formula would provide proportionally greater benefits for more serious impairments. For example, a 1 to 10 percent standard rating could receive $100 per percent; an 11 to 25 percent rating could receive $200 for each percent in this interval; a 26 to 50 percent rating could receive $400 per percentage point in this interval; and ratings over 51 percent could receive $500 per percent in excess of 50 percent. Thus a 30 percent rating would result in $5,500 of impairment benefits. The impairment benefits could be paid in a lump sum at the time of the rating.

The Use of Multiple Benefits

We have stated our belief that permanent partial benefits are warranted both because the worker experiences a work disability and because of the impairment per se. How should this dual purpose be translated into an operational basis for benefits?

One possibility would be to have a three-tiered benefits system, paying (1) impairment benefits that are operationally based on the standard rating of the worker's impairment and functional limitations; (2) presumed work-disability benefits that are paid for six months with the amount of the weekly benefit determined by the size of the modified impairment rating; and (3) wage-loss benefits that are paid after the six months for those workers who qualify on the basis of the criteria in table 12.1. Thus every worker with a permanent disability rating of at least 1 percent would receive two types of benefits (impairment and presumed disability), and some would also receive a third type (wage-loss).

A simpler dual-benefit system would collapse the impairment benefits and presumed disability benefits into IPD benefits (impairment/presumed disability benefits). All workers with a permanent disability rating of at least 1 percent would receive IPD benefits, and some workers would also qualify for wage-loss benefits. Since the primary purpose of permanent partial disability benefits is to compensate for work disability, the IPD benefits would be wage-related. If there were a dual-benefit

system, the amount of the IPD benefits would be somewhat larger than the amount of the presumed disability benefits under a three-tiered system in order to incorporate both purposes—compensating work disability and compensating impairment—into the IPD benefits.

An advantage of the three-tiered benefits approach is that the judgments of adequacy and equity would be simplified. The total amount of the presumed disability benefits and wage-loss benefits can be compared to the worker's actual loss of earnings, since the sole purpose of these two types of benefits is to compensate for work disability. Awarding the initial six months of permanent disability benefits with the purpose of compensating for impairment and work disability (the IPD benefits) complicates judgments, since some proportion of the benefits are payment not for work disability, but for the other consequences of the work-related injury or disease.

If a dual-benefit approach is selected, the preferred method collapses the impairment and presumed work-disability benefits into IPD benefits and then allows wage-loss benefits to start after six months. An alternative dual-benefit approach uses impairment benefits and wage-loss benefits, with the latter commencing immediately after the worker reaches MMI. This approach is not desirable, however, because, as indicated earlier, we believe that granting eligibility for wage-loss benefits immediately after MMI can represent a disincentive to rehabilitation.

Standards to Be Used in Evaluating Impairments and Functional Limitations

The previous discussion made clear our preference for evaluating impairments and functional limitations by using comprehensive guidelines, such as the AMA *Guides*, that primarily rely on objective factors, rather than subjective factors such as pain and lack of endurance. A major reason for use of these guidelines is that they minimize the amount of discretion available to the personnel rating injured workers. In most workers' compensation programs today, reducing the existing discretionary scope could often work to an employee's disadvantage. In our approach, however, the lack of flexibility at the rating stage is not critical, because the actual wage-loss benefits serve as a safety valve. That is, if the initial prediction of presumed work disability is unduly low, the wage-loss benefits can help offset the error.

Application of the Rating Standards

Most of our recommendations discussed so far in this section have concerned the appropriate standards for rating impairments and work disability and the types of benefits that should be paid to workers with permanent partial disabilities. Administrative arrangements and procedures are also an important component of our recommendations. One particularly important matter concerns who should make the decision on a case-by-case basis about the appropriate rating. The typical pattern in most jurisdictions is for the employee and employer (or the lawyers or carriers representing these parties) to negotiate an agreement about the extent of permanent disability. When an agreement cannot be reached, the issue is resolved by an administrative law judge in the workers' compensation agency.[15] In view of the expense of litigation and the inconsistencies among ratings that occur, depending on such vagaries as whether the worker is represented by a lawyer and who his employer is, we do not think this approach is appropriate. In order to reduce litigation and inconsistencies, we would assign primary responsibility for assigning ratings to an impairment rating division (IRD) that is a component of the workers' compensation agency.

The IRD would be required to rate the extent of the worker's permanent disability (or the extent of the worker's impairment and functional limitations, if that is the basis of the rating) before permanent partial disability benefits are paid or before the case can be taken to a hearing before the administrative law judge when the amount of permanent partial disability benefits is an issue. The IRD would make a rating based on medical evidence from the treating physician, from an examining doctor selected by the worker, or from a doctor chosen by the employer. When there is a conflict in medical evidence, the IRD must resolve it, either by using a doctor who is a staff member of the workers' compensation agency or by obtaining evidence from an impartial doctor the IRD selects.

The rating assigned by the impairment rating division must be used by the parties and the workers' compensation agency (including administrative law judges) unless the worker or the employer can demonstrate by a preponderance of evidence that the rating is capricious, arbitrary, or grossly inappropriate. If the parties can convince the administrative law judge that the rating is defective, then the case must be returned to the IRD for further consideration. The parties and the administrative law judge may submit additional information for con-

sideration by the IRD, but the IRD also must have the right to obtain additional medical information if the case is referred back to it, and the IRD is ultimately responsible for deciding the appropriate rating. This scheme provides the impairment rating division with an amount of authority that is found in none of the workers' compensation programs we examined. We are convinced that such centralization of rating authority and protection of the IRD's rating are necessary if consistency among awards is to be assured and the incentive for litigation is to be reduced. The ultimate justification for this degree of centralization of authority over the ratings in our scheme is that if the IRD seriously underestimates the adverse economic consequences of a work-related injury or disease, the wage-loss benefits are available to the worker after six months, a safeguard that is missing now in almost every state workers' compensation program. In short, we place considerable emphasis on efficiency of the rating process and consistency among the ratings (even though they may be inaccurate predictors of the extent of work disability) because the wage-loss benefits can deal with the equity problems caused by seriously deficient predictions of earnings losses.

There are several complementary policies that will facilitate the role we have specified for the impairment rating division. One is that the IRD would train physicians in the state to apply the rating standards being used, which should help reduce the potential for disagreement between the parties concerning the appropriate ratings. Also, inappropriate litigation can be discouraged by limiting attorneys' fees in cases involving disputes over the extent of the permanent disability ratings to an amount that is proportional to the increase in the disability rating between the IRD's initial rating in the case and the rating ultimately assigned by the IRD. If the initial rating is not changed as a result of the hearing, the attorney is not entitled to any fee for the part of the case concerned with the extent of the disability rating. (In most permanent partial disability cases that is the sole issue.) If this stringent requirement for attorneys' fees were used by a state, the fees could appropriately be added to the worker's award rather than subtracted, as is the practice in most workers' compensation programs now.

We recognize that some states will be reluctant to move to an impairment rating bureau of the sort we prescribe, at least initially. A transition stage could involve the use of neutral doctors approved by the state workers' compensation agency to make ratings based upon a comprehensive set of guidelines issued by the state. These physicians could be in private practice and would be certified because of their neutrality

between the parties. They could be approved by a selection committee that includes representatives of workers and employers. We do not believe that the use of such doctors is ideal, especially if a state uses a rating formula that incorporates factors other than the extent of impairment and functional limitations, such as age and education. Also, even if standards are widely promulgated, their application may be inconsistent among doctors. The use of an impairment rating division is likely to reduce such inconsistencies.

Other Prerequisites for a Wage-Loss System

A state that adopts the benefit proposals we have suggested must be willing to expend administrative resources for their implementation. The benefit proposals are new and relatively complex, and there is considerable potential for litigation and thus for the system to be undermined. The key to the successful operation of the program is an active state workers' compensation agency. The components of such an agency have been described in some detail in chapter 4, and only a few points will be reemphasized here. One is that an active state agency requires adequate resources and manpower. As we have stressed in part IV of this report, the practice in many states of equating efficiency with low budgets for workers' compensation agencies is a clear instance of false economy; the almost inevitable consequence of an underfunded agency is the encouragement of litigation, which in turn requires the utilization of considerable resources in the private sector to administer the program.

Another point is that it is important to separate the adjudication function in the agency from the administrative function. In some states, administration takes second place to adjudication partially because the chief administrator is also a member of the appeals board. Although such an arrangement does not always undermine administration, we believe that such matters as record keeping, monitoring, and evaluation usually receive due attention only when there is an administrator who understands these are his responsibilities and that one measure of his success is the extent to which he can reduce adjudication.

Another important aspect of a workers' compensation program that incorporates wage-loss benefits is the encouragement of rehabilitation. One of the most desirable consequences of a program that potentially involves wage-loss benefits of substantial amounts paid over long durations is that there is a strong incentive for employers to avoid unnecessary payment of benefits by providing rehabilitation at an early stage of the case.

A final prerequisite for a wage-loss system worth stressing is that the wholesale reliance on compromise and release agreements to resolve disagreements about the extent of disability and to prematurely end potential claims should by all means be avoided, because of the threat to equity it represents. An essential attribute of the wage-loss approach is that some protection is provided for workers with unanticipated wage loss that occurs long after the permanent disability ratings are made. The best way to overcome the poor record of *ex ante* predictions about the extent of wage loss is to begin to supplement the initial benefits with *ex post* benefits for workers who have unusually large earnings losses. This requires that cases be open longer, which means that employers and carriers have greater potential long-term liability and thus higher risks. Devices other than compromise and release agreements must be sought to enable the parties to live with risk, such as separate funds for cases with extended durations of wage-loss benefits.

Some Tests for the Operational Versions of Our Proposals

The proposals we have made concerning the types of permanent partial disability benefits that are appropriate and the procedures that should be used to provide these benefits would involve significant modifications of the permanent partial disability benefit programs in most states. There are several ongoing tests that could be used to monitor the performance of our proposals and decide whether they have achieved their goals. If these tests are not being met, the evidence will help the participants in the system redesign the program. We recognize that our proposals will initially need to be adapted to each state and will require continuing monitoring and modification.

The criterion of efficiency is reflected in two tests. One concerns the extent of litigation in permanent partial disability cases over the extent of disability. If, at the stage of the case where the permanent ratings are being determined, litigation occurs in more than 15 or 20 percent of the cases, the system is not serving the purpose of reducing litigation. The program would then have to be modified either by making the standards more comprehensive or objective or by increasing the protection afforded to the ratings made by the impairment rating division.

Another test of efficiency concerns the proportion of cases that qualify for wage-loss benefits after the initial six months of presumed disability benefits expire. If more than 20 or 25 percent of the cases that qualify for presumed disability benefits also qualify for wage-loss benefits, adjustments are probably needed. One possible adjustment is to extend

the duration of the presumed disability benefits from six months to a longer period, such as a year. Some workers experiencing actual wage loss after six months would have recovered their earning capacity by the end of the year and thus would not qualify for wage-loss benefits. Extending the duration of the presumed disability benefit would probably require a reduction in the amount of the weekly benefit in order to avoid substantially increasing the cost of the system.

The equity criterion that requires benefits to be matched to wage loss can best be evaluated by monitoring the earnings losses of workers. This might require an examination similar to the procedure used in this research project, in which earnings reported to the Social Security system are evaluated periodically to see if earnings losses are matched by permanent disability benefits. That form of monitoring requires considerable effort, however, and there are other simpler tests that will provide at least some evidence about whether the equity goal is being achieved. For example, the proportion of cases that are terminated by compromise and release agreements is an indicator of potential lack of equity, since those cases in which unanticipated wage loss occurs after the compromise and release agreement is signed are bound to involve equity problems. A system in which more than 5 or 10 percent of the permanent partial disability cases are terminated by compromise and release agreements is not likely to provide sufficient equity.

Finally, assessment of adequacy (which concerns the proportion of lost earnings replaced by benefits) probably requires monitoring of actual wage loss and comparison between the losses and the benefits. Our study has convinced us that examination of statutory benefit amounts and durations provides little guidance to adequacy because of the critical importance of the rating system in determining the amount of benefits a particular injury will receive.

The Wage-Loss Concept in Florida

The Florida legislation of 1979 is the most widely discussed innovation in providing permanent partial disability benefits in the last decade, and so warrants special attention. The legislation provides impairment benefits that are paid to workers with certain types of permanent impairments (amputations, loss of 80 percent or more of vision, or serious head or facial disfigurements) but are not paid to workers with other types of permanent impairments (such as total or partial loss of use of a body member). The impairment benefits as of 1986 were $250 for

each percent of permanent impairment for 1 to 10 percent ratings, and $500 for each percent over 10 percent. Thus a worker with a 60 percent impairment rating receives $27,500. These impairment benefits can be paid in a lump sum as of the date of maximum medical improvement.

Workers with permanent impairments are also eligible for wage-loss benefits as of the date of MMI if sufficient wage loss occurs. Wage-loss benefits are paid to workers with at least a 15 percent loss of earnings. Benefits are 95 percent of the earnings losses in excess of the 15 percent threshold. The maximum wage-loss benefit is the lesser of 66.66 percent of the worker's preinjury wage or 100 percent of the state's average weekly wage. There is, in effect, a 5 percent per year escalation in potential earnings used to calculate wage loss (this figure was 3 percent a year for injuries that occurred before July 1, 1980).

The maximum duration for the wage-loss benefits is 525 weeks (an increase from 350 weeks for injuries that occurred before July 1, 1980). When the worker becomes eligible for Old Age benefits from Social Security (normally at age 62), the wage-loss benefits are reduced by the amount of the Old Age benefits. Workers lose their eligibility for additional wage-loss benefits if they do not experience at least three consecutive months of compensable wage loss in each two-year period.

The 1979 Florida legislation thus establishes two types of benefits for workers with permanent consequences of their work-related injuries or diseases. Impairment benefits are paid to workers with the specified types of permanent impairments. Wage-loss benefits are paid to workers with wage losses that meet the statutory prerequisites. An individual worker may be eligible for impairment benefits, or wage-loss benefits, or both types of benefits, or neither type of benefit, depending upon the exact nature of the permanent impairment and the timing and amount of the earnings losses.

Evaluation of Florida Wage-Loss Benefits

The Florida wage-loss benefits will be evaluated here on the basis of some of the aspects for such benefits included in table 12.1.[16] The record is mixed. Florida's system conforms with the first aspect of the extensive type of wage-loss benefits because the law makes all workers with permanent disability ratings of at least 1 percent potentially eligible for wage-loss benefits. The Florida legislation also conforms with the fifth aspect, which requires that wage-loss benefits be paid only to

workers with at least moderate lost earnings (the requisite in Florida that there be at least a 15 percent loss before any wage-loss benefits are paid is midway between the thresholds for the limited and extensive types of wage-loss benefits). The Florida law also largely complies with aspect eight, which prescribes a reasonable deadline after the date of MMI by which wage loss must be established in order for a worker to be eligible for wage-loss benefits. Similarly, there is substantial compliance with the ninth aspect, which specifies the duration of the break in earnings losses that will cause the worker's eligibility for wage-loss benefits to lapse.

The Florida law partially complies with the third aspect, which requires the potential earnings of workers to be adjusted through time to reflect changes in wages or prices. There is also compliance with the tenth aspect of the limited type of wage-loss benefits, which requires that benefits be paid for 350 weeks or until the worker reaches the normal retirement age, whichever is sooner. The maximum duration of 525 weeks does not yet bring Florida into compliance with the tenth aspect for the extensive type of wage-loss benefits, however, which requires wage-loss benefits until the worker reaches normal retirement age even if the worker is injured ten or more years before that date.

The Florida legislation fails to meet several of the desirable aspects for wage-loss benefits included in table 12.1. The second aspect, requiring a lag between the date of MMI and the initial date of eligibility for wage-loss benefits, is clearly violated since workers are immediately eligible for benefits. Many workers will begin to receive benefits in the rehabilitation phase of their postinjury recovery period and are likely to face serious disincentives to undergo rehabilitation and to return to work. The disincentive problem is aggravated because 95 percent of earnings losses above the threshold are replaced, a clear violation of the seventh aspect. This is especially troublesome since the benefits in Florida are tax-free. With a 95 percent replacement rate, some workers will actually be worse off financially by increasing the amount of time they work. (See Burton 1983, pp. 41-45.)

It is particularly difficult to evaluate the Florida legislation in terms of aspects 4, 11, and 12. These aspects pertain to the definition of earnings shortfall and the assignment of burdens of proof to establish the cause and magnitude of postinjury earnings losses. The statutory provisions and the court decisions in Florida were examined in chapter 9, and the best brief characterization is that Florida has not yet suc-

cessfully resolved the problems of distinguishing compensable from noncompensable earnings losses. Unfortunately, the 1983 amendments appear to have raised serious obstacles to workers in establishing their eligibility, and we concluded these amendments were inappropriate. Whether the Florida courts will apply the 1983 amendments in the spirit in which they were apparently intended remains to be seen. Taken at face value, the recent changes stand as a serious challenge to a primary purpose of the wage-loss approach: to compensate workers who experience losses of earnings that would not have occurred but for their work-related injuries or diseases.

An overall evaluation of the 1979 Florida legislation dealing with permanent disabilities is obviously difficult and dependent on subjective values. We have identified some attributes of the law that agree with our recommendations and some that do not, but the day when the actual performance of the law can be evaluated in terms of adequacy, equity, and efficiency may be long in coming, since (as remarked in chapter 9) no data on the operation of the Florida law are being collected that will permit such an evaluation.

Conclusions

Several of our conclusions deserve to be briefly restated. One set of conclusions addresses the criteria that are currently used in most jurisdictions to provide permanent partial disability benefits. Our 10-state study has made clear that the dominant approach to compensating permanent partial disabilities relies on proxies for wage loss that are evaluated before the period when the actual wage loss occurs. The data from our wage-loss study of California, Florida, and Wisconsin suggest that the prospective (or *ex ante*), proxy approach does a poor job of matching benefits to actual wage loss and thus results in serious inequity. The results also suggest that the *ex ante* approach can provide benefits that on average are adequate, inadequate, or excessively generous. In short, nothing inherent in the *ex ante*, proxy approach precludes success on the adequacy criterion, but the prospects of achieving equity appear virtually nonexistent.

Another set of conclusions concerns the procedures that are currently used in most jurisdictions to provide permanent partial disability benefits. In terms of the administrative functions identified in chapter 4, most jurisdictions place primary emphasis on adjudication rather than record keeping, monitoring, and evaluation. The emphasis on adjudica-

tion is seen to result in high delivery system costs, once expenditures in the private sector, most notably attorneys' fees, are figured in. Our data from part III indicate that California and Florida, which were much more litigious than Wisconsin at the time of our wage-loss study, do not achieve greater adequacy or equity as a result of the devotion of substantial resources to litigation. In short, those delivery systems, which are typical of most states' procedures for permanent partial disability benefits, suffered from substantial inefficiency. Inefficiency is not inherent in the provision of such benefits, as the example of Wisconsin proves. With much less litigation than Florida and California, Wisconsin provided benefits that were more adequate and equitable than those in the other jurisdictions.

The previous paragraphs provide a serious indictment of the criteria and procedures used to provide permanent partial disability benefits in most jurisdictions at the present time. The procedures and criteria produce benefits that sometimes are inadequate, often are provided inefficiently, and invariably are inequitable. We would like to end this study by providing an easy solution, or an obvious solution, or at least a solution that we are convinced will work, even if complicated and obscure. Alas, we cannot even provide that degree of certitude. What we can provide are some general guidelines that we believe represent the best possible hope for reform of permanent partial disability benefits.

One set of guidelines concerns the procedures that hold the best promise for adequate, equitable, and efficient benefits. Most states need to significantly redirect the efforts of their workers' compensation agencies away from adjudication in favor of record keeping, monitoring, and evaluation. Let justice be served by avoiding adjudication! And coupled with this redirection of effort must be a recognition that tight budgets for a workers' compensation agency often are a sign of myopia, not fiscal prudence. We surely do not endorse every possible item in a workers' compensation agency's budget, but we are convinced that excessive stringency will curtail the ability of the agency to perform the necessary record keeping, monitoring, and evaluation functions and drive the delivery system toward excessive litigation. To be sure, the cost of an agency subject to a tight budget may be less, but only at the price of undue resources devoted to litigation. Needless to say, any workers' compensation system will involve some litigation, but the use of adjudication to process permanent partial disability claims should be the exception rather than the rule.

Another set of guidelines concerns the criteria that show the greatest promise of promoting adequacy, equity, and efficiency. We have roundly rejected the dominant approach currently used, namely the *ex ante* approach. Although we do not believe this approach holds much promise for reform, we have offered suggestions for an improved *ex ante* approach in this chapter. Much more noteworthy is the wage-loss (or *ex post*) approach, which provides benefits to workers after they have demonstrated actual wage loss. This approach holds promise for greater equity. Because of its adoption in Florida in 1979, the wage-loss approach has generated considerable enthusiasm. The wage-loss approach is not inherently adequate, and thus is not necessarily superior to the *ex ante* approach on this ground. Nor is the wage-loss approach inherently less expensive than the *ex ante* approach. Burton (1983) has demonstrated that the nonscheduled permanent partial benefits in New York are now accounting for more than half of all the dollars spent on cash benefits in the state, and that these costs have increased rapidly in the 1970s in response to deteriorating labor market conditions. These nonscheduled permanent partial disability benefits in New York are a variant on the wage-loss approach, and are obviously providing a lesson different from that provided by the cost-reducing experience that Florida has had with its version of wage-loss benefits.

In addition to these reservations concerning the adequacy and expense of wage-loss benefits, a lesson from Florida concerning the difficulties of administration bears repeating: the application of the wage-loss concept is not as easy as might appear at first glance. The problems Florida has had in sorting out compensable from noncompensable wage loss are not going to be easily solved elsewhere.

There are additional drawbacks to the pure wage-loss approach that would begin permanent partial disability benefits on this basis as of the date of maximum medical recovery. We have indicated our concern over the disincentive to engage in rehabilitation or to return to work that is aggravated if the wage-loss approach begins too soon. Our preferred solution is a hybrid approach, which would provide benefits without regard to actual wage loss for a limited duration (perhaps six months) after the date of MMI and then give way to benefits based on actual wage loss. Like the *ex ante* and wage-loss approaches, there can be considerable variations in design and administration of the hybrid approach. The hybrid approach has a limited counterpart in New York (See Burton 1983) and an intellectual history that predates our research.[17] We believe there is sufficient evidence to justify states in abandoning

the traditional criteria and procedures for providing permanent partial disability benefits, with their deficiencies in adequacy, equity, and efficiency, and sufficient understanding of the wage-loss and hybrid approaches to warrant the adoption of those approaches in more jurisdictions. With sufficient experimentation and with appropriate monitoring of the experiments, there is hope that the proper criteria and procedures for permanent partial disability benefits can be identified with more certainty in the next decade.

NOTES

1. Pennsylvania uses a limited wage-loss approach and yet does not permit compromise and release agreements. As discussed in chapter 8, however, the Pennsylvania wage-loss benefits are limited in duration and amount.

2. See the discussions of Michigan and Florida. Also see the evidence from Ohio discussed in chapter 8.

3. Even those gains in equity may be illusory, however. Given the substantial problems in deciding, even on a retrospective basis, what was the contribution of a work-related injury or disease to a particular loss of earnings, it may be that weighing all the evidence pertaining to that issue on a case-by-case basis may not do much to improve the record of matching workers' compensation benefits to the wage losses caused by work-related injuries and disease. The recent court decisions in Florida discussed in chapter 9 illustrate the problems of identifying earnings losses due to work-related causes.

4. The apparent purpose of the schedules is to use a relatively inexpensive procedure that provides a rough estimate of earnings loss associated with certain injuries. In terms of graph 2.2, the use of schedules can be considered a decision to choose a point in the lower portion of the Quality/Cost Constraint Line because of a desire to minimize administrative costs. A policy that pursues low administrative costs without regard for the consequences of the quality of benefits represents myopic efficiency.

5. The specific factors used in California (age and occupation) may not be the best available predictions of the differences in earnings losses that will occur for workers with similar impairment ratings. Other relatively "objective" factors that could be used include sex, educational level, and extent of prior work experience. The essence of the California approach is not the specific factors used, but the reliance on a formula approach to estimate the extent of work disability for all types of injuries and diseases. In other states, nonscheduled injuries are often rated on the basis of a relatively time-consuming investigation of the facts of each case.

6. There may be, however, no improvement in equity from evaluating the loss of earning capacity by considering on a case-by-case basis all the factors that affect earning capacity, rather than using a California-type schedule to estimate loss of earning capacity. Given our limited understanding about the relationships between earnings and a worker's age, occupation, experience, etc., it is not clear that consideration of all of these factors improves the accuracy of predictions about earnings losses compared to predictions based on formulas that consider only a few factors. The data from chapter 10 indicate that California (which estimated loss of earning capacity by use of a

schedule) and Florida (which estimated loss of earning capacity by using all of the relevant facts in a case) both had serious equity problems with the statutes in effect in 1968.

7. The National Commission argued that when workers gave up their common law remedies, they received the right to receive workers' compensation benefits without regard to the employer's fault. As a result, the employer's liability for the consequences other than work disability should be limited. (National Commission 1972, p. 38.)

8. Historically, the benefit levels in workers' compensation were inadequate (National Commission 1972, pp. 60-62) and generally no higher than the benefits in other social insurance programs. But the recent increases in workers' compensation benefits have made them generally higher than benefits in other programs, according to Berkowitz (1977).

9. The contrast between the National Commission's view and Berkowitz's view on equity versus efficiency is in effect a debate about whether policy option 2 or policy option 4 in graph 2.2 is preferable. Policy option 4 involves greater equity and higher administrative costs, while policy option 2 involves less equity and lower administrative costs. Since both options are on the quality/costs constraint line, they represent equal panoramic efficiency.

10. The adequacy goal is also not achieved if there is a general tendency for a workers' compensation program to fail to distinguish between wage losses due to work-related injuries or diseases and wage losses due to other causes. For example, the average replacement rate in a state could be too high if the program provides benefits to many cases in which "wage losses" are due to factors such as retirement at the normal retirement age.

11. For an extended discussion of the incentives to employees and employers in a wage-loss approach, see Burton (1983), pp. 34-35.

12. A potential problem of an eligibility threshold is that the behavior of workers can be significantly affected if, e.g., a small additional amount of earnings losses establishes the worker's eligibility for a sizeable amount of benefits. This "notch" effect can be minimized if the workers who barely qualify for some benefits only receive a nominal amount, as in the plan for wage-loss benefits encompassed in table 12.1.

13. Work-related diseases pose a more serious problem for designing appropriate time limits for eligibility for wage-loss benefits than do work-related injuries. In principle, the eligibility date for a work-related disease should be based on the date when a worker is first disabled, rather than on the date of exposure to the substance that produced the disease. In practice, given the long latency period for some diseases and the multiple causes of many diseases, a well-designed wage-loss system will have to consider such issues as the use of presumptions that help decide whether the wage loss is due to a work-related disease or not. Thus a worker exposed to a particular toxic substance at work who is subsequently disabled from a disease that might have been caused by the toxic substance could use a presumption that the disease is work-related if the period between exposure and disability is 10 years or less, but would have to overcome a presumption that the disease is not work-related if the period is over 10 years.

14. A minimum duration of wage-loss benefits may be appropriate for workers injured near or after their normal retirement ages. For example, a worker injured at age 68 in an industry in which the normal retirement age is 65 could be eligible for a minimum of one year's wage-loss benefits (assuming he met the other prerequisites for such benefits, such as demonstration of an earnings shortfall). The minimum duration provision would have to be drawn carefully in order to prevent wage-loss benefits from becoming a general retirement bonus.

15. Wisconsin is an obvious exception to the typical pattern described in the text, and much of the discussion concerning desirable changes in agency structure and procedure is inapplicable to Wisconsin.

16. For an evaluation of the impairment benefits plus additional evaluations of the wage-loss benefits, see Burton 1983, pp. 41–49.

17. Although the hybrid system has only limited counterparts in actual practice, it does have an intellectual history that provides some reassurance for those concerned about sharp breaks in tradition. Perhaps the most compelling precedent is the Report of the Permanent Partial Disabilities Committee of the IAIABC (Reid 1966). Although the particulars of the Reid committee report differ from the hybrid proposal in this chapter, its purposes and approaches are similar.

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